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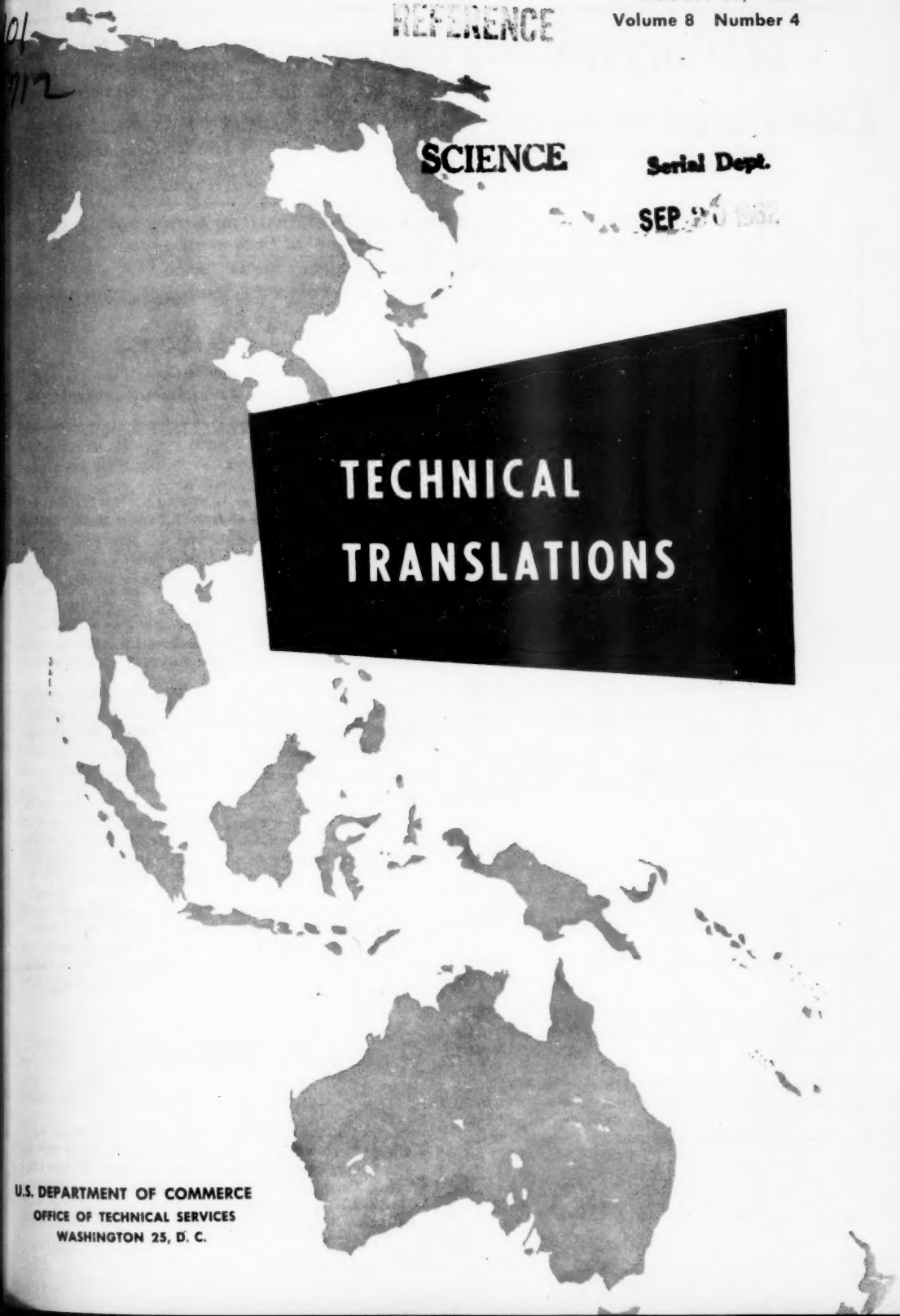

SCIENCE

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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UNITED STATES DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

Volume 8, Number 4 Pages 307 - 417 August 30, 1962

*Descriptors marked with an asterisk are included in the subject index.

BIBLIOGRAPHY

NLL TRANSLATIONS BULLETIN, 1962, VOL. 4, NO. 4, P. 305-395 AND INDEX VOL. 2. Apr 62, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes reports on visits, translations available from National Lending Library loan collection, and trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 10, p. 1385-1401; Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26] no. 5, p. 664-668; Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1961 [v. 15] no. 6, p. 57-58; Kinetika i Kataliz (USSR) 1961, v. 2, no. 5, p. 643-647; also mono. Iron Ore Supplies of the USSR, a compilation of information by the British Broadcasting Corp.

DESCRIPTORS: *Translations, *Scientific reports, *Bibliography, Food, Industry, Plant pigments, Fats, Oils, Resins, Drugs, Sources, *Plants, *Biochemistry, Scientific research, Design, *Catalysts, Catalysis, Radioactive isotopes, Isotopes, Iron, Ores.

Contents:
Plant resources of the USSR in the service of the national economy, by Al. A. Fedorov
New production processes to be developed on the basis of the latest achievements in biochemistry, by A. I. Oparin
Regarding the work of the Institute of Scientific Research and Design and experimental establishments
All-union Congress on Isotopes in catalysis (no. 2) [including] list of papers presented
Iron ore supplies of the USSR.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
July 62, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

AGRICULTURE

SOVIET SCIENCES AND AGRICULTURE. 28 Mar 62 [21]p. JPRS: 13267.
Order from OTS or SLA $2.60 62-23767

Trans. from Izvestiya (USSR) 1961, no. 177, p. 3; ##Ekonomicheskaya Gazeta (USSR) 1961, no. 2, p. 3; Zarya Vostoka (USSR) 1961, 17 Aug, p. 2; Leninskoe Znamya (USSR) 1961, 13 Sep, p. 1.
##Another trans. is available from OTS or SLA $1.10 as 61-28598, JPRS-10417, 5 Oct 61 [7]p.

DESCRIPTORS: Communism, *Agriculture, *Science.

Contents:
Agricultural Institutes, P. Kanov
##A discussion of the proposed text of the program of the Communist Party of the Soviet Union, by V. Fedorov
The main road, by G. Ya. Shkhvatsabaya
For closer relations between science and practical work.

Chudnovskii, A. F.
PRINCIPLES OF A METHOD FOR STUDYING THERMAL CONDITIONS IN SOIL. [1961] 7p. 3 refs.
Order from OTS or SLA $1.10 AEC-tr-4778

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1946, v. 16, no. 2, p. 243-248.

DESCRIPTORS: *Soils, Temperature, Thermal conductivity, Heat transfer, Partial differential equations.

The principles are presented of non-stationary procedures for determining the thermal characteristics of soil, by introducing a linear rod as an isothermal (first variation) or instantaneous (second variation) heat source. (Author)

Martini, Z.
ON THEORIES CONCERNING OPERATION OF AGRICULTURAL IMPLEMENTS (Rozwazania Dotyczace Pracy Narzedzi Rolniczych) tr. by E. Strassburger. 1962 [17]p. 29 refs. PL-480 Agr.
Order from OTS $0.50 60-21542

Trans. of Roczniki Nauk Rolniczych. Ser[ia] F:[Melioracji i Uzytkow Zielonych] (Poland) 1955, v. 71, no. 1, p. 57-71.

DESCRIPTORS: Agriculture, *Machines, *Soils, *Agricultural machinery

Analytical and graphic analyses are presented concerning the influence of tillage implements on the redepositing of soil particles. Both the influence of vertical formation and rapidity of motion are taken into account. It is concluded that every implement having symmetrically constructed working parts brings about a downward movement of the soil on slopes, depending upon the direction of operations (use of cultivators upwards along the maximum gradient has not been taken into consideration since it does not enter into practice. The influence is studied of various directions of plowing on the land form of one and the same field. The author proposes cutting the furrow bottom with a special chisel mounted on the plow. The object of such cuts is to prevent plowing along the plow scale.

Animal Husbandry

INFECTIOUS DISEASES OF ANIMALS IN THE GDR: SUMMARY CHARTS. 20 Mar 62 [11]p. JPRS: 13059.
Order from OTS or SLA $1.60 62-23630

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 16, p. 638-639; no. 17, p. 672; no. 18, p. 714; no. 21, p. 827; no. 22, p. 867; no. 23, p. 904.

DESCRIPTORS: *Infections, Diseases, *Veterinary medicine, *Animals.

Berbinschi, C. and Taga, L.
THE USE OF GLOBULINS FROM THE ANTI-AUJESZKY SERUM IN THE PREVENTION OF THE AUJESZKY DISEASE IN SUCKLING PIGLETS. 7 Nov 61 [10]p JPRS: 10998.
Order from OTS or SLA $1.10 62-19501

Partial trans. (some sections summarized) of Probleme Zootehnice si Veterinare (Rumania) 1961, v. 11, no. 7, p. 44-49.

DESCRIPTORS: *Blood proteins, Antibodies, *Immunology, *Swine, Diseases, Rabies, *Veterinary medicine.

From the anti-Aujeszky serum, an anti-Aujeszky globulin concentrate was prepared by the technique of precipitating the globulins from the serum through its dilution with distilled water and saturation with carbon dioxide. The electrophoretic control of the obtained product showed the presence in the mixutre of the three globulin fractions with albumin traces. The anti-Aujeszky globulins had in vitro, a neutralizing power four times larger than that of the hyper-immune serum. The globulins from the anti-Aujeszky serum used in active disease foci reduced the losses in suckling piglets to 9.3%, as against 25.4% losses for pigs inoculated with anti-Aujeszky serum, and 37.5% losses in the non-inoculated control lot. The simple and inexpensive method of preparation of the blobulins from the anti-Aujeszky serum, as well as the results obtained, allow us to recommend the introduction in practice of this product as a means of prophylaxis for Aujeszky disease in suckling piglets during the first few weeks of life. (Author)

Lebedev, I. A.
THEORETICAL PRINCIPLES ON THE FEEDING OF AGRICULTURAL ANIMALS (Teoreticheskie Osnovy Kormleniya Sel'skokhozyaistvennykh Zhivotnykh). 1 Dec 61, 10p. Trans. A-1318.
Order from OTS or SLA $1.10 62-23294

Trans. of Vestnik Sel'skokhozyaistvennoi (USSR) 1961 [v. 6] no. 5, p. 151-153.

DESCRIPTORS: *Animals, *Feeding, Agriculture, Vitamins, *Nutrition.

Activities are summarized of a conference of a Broadened Assembly of the Coordination Council which met at the All-Union Academy of Agricultural Sciences.

Nielsen, F. Woldike.
ON THE CONDITIONS OF IMPORTATION OF ANIMALS AND PRODUCTS OF ANIMAL ORIGIN. 6 Aug 59 [13]p. 1 ref. JPRS: L-897-N.
Order from OTS or SLA $1.60 59-13782

Trans. of Congres International Veterinaire (no. 16) Madrid, 21-27 May 59. [Proceedings] v. 1, p. 393-402.

DESCRIPTORS: *Meat, *Veterinary, Medicine, Animals, Infections, Epidemiology, Diseases.

Papadopol, I., Tudor, Despina, and Mocanu, I.
THE BEHAVIOR OF INDIGENOUS ANTI-APHTHOUS VACCINES IN PIGS. 16 Oct 61 [6]p. JPRS: 10572.
Order from OTS or SLA $1.10 62-19526

Trans. of Probleme Zootehnice si Veterinare (Rumania) 1961, v. 11, no. 4, p. 58-60.

DESCRIPTORS: *Swine, Foot-and-mouth disease, *Virus vaccines, Immunology, Veterinary medicine

Schumann, H.
THE SIGNIFICANCE OF SYMBOVINE FLIES IN THE DISSEMINATION OF THE CAUSATIVE AGENTS OF MASTITIS. 9 Jan 62 [8]p. 6 refs. JPRS: 11863.
Order from OTS or SLA $1.10 62-19731

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 16, p. 624-626.

DESCRIPTORS: *Cattle, *Diptera, Insects, Disease carriers, *Streptococcus infections, Veterinary medicine, Mammary glands.

Solomkin, P. S. and Dushuk, R. V.
RABBIT VIRUS VACCINE FROM THE NATIVE STRAIN OF THE SWINE PLAGUE VIRUS (Krolich'ya Virus-Vaktsina iz Otechestvennogo Shtamma Virusa Chumy Svinei). [1961] 12p. Trans. V-1756.
Order from OTS or SLA $1.60 62-23303

Trans. of Veterinariya (USSR) 1961, v. 38, no. 8, p. 33-36.

DESCRIPTORS: *Virus vaccines, Immunology, *Swine, *Plague, Veterinary medicine.

It was established that it is possible to adapt the native strain of the swine plague virus to rabbits, at the same time the plague virus lost its virulence for swine when it reached the 23rd passage, but retained its immunogenic properties. In testing the rabbit virus vaccine of VIEV, series no. 4 (50th passage) on young immature pigs, immunity was obtained in the first experiment not only in vaccinated, but also in the two young pigs housed with them. This offers a basis for allowing the possibility that immunity could form even if the rabbit virus vaccine were introduced orally. (Author)

Train, G.
LISTERIOSIS CONTROL CENTER, NATIONAL VETERINARY MEDICINE TESTING INSTITUTE: ANNUAL REPORT FOR 1960. 28 Nov 61 [16]p. JPRS: 11259.
Order fromOTS or SLA $1.60 62-19734

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 10, p. 378-380.

DESCRIPTORS: *Listeria, *Infections, *Animals, Cattle, Sheep, Chickens, *Diagnosis, Countermeasures, *Veterinary medicine.

In the year 1960, some 497 Listerial cultures were isolated in East Germany; these had as origin: 462 spontaneously-infected sheep, 12 head of cattle; 7 guinea pigs, 3 chickens, 1 pig and 1 goat, as well as 11 animals of unspecified species. A total of 367 cultures belong to the Sero. gp. O I, II and 128 cultures belong to Sero. gp. O V. The diagnosis of listeriosis and its geographical and seasonal distribution are presented. The previous work of the C.C., and the introduction of uniform, diagnostic materials for detection of Listeriosis are reported. (Author)

Ziegler, H. G.
THE FREQUENCY OF OCCURENCE OF THE VARIOUS CAUSATIVE AGENTS OF MASTITIS AND THEIR SIGNIFICANCE IN THE TREATMENT OF MASTITIDES. 12 Jan 62 [17]p. JPRS: 11939.
Order from OTS or SLA $1.60 62-19739

Trans. of Monatshefte für Veterinärmedizin (East Germany) 1961, v. 16, no. 20, p. 773-776.

DESCRIPTORS: *Mammary glands, Infections, *Inflammation, *Cattle, Etiology, Therapy. Veterinary medicine.

Plant Cultivation

Izawa, Masao and Katsuki, Yamamoto.
STUDIES ON THE PREVENTION OF MOLD DEVELOPMENT ON TOBACCO LEAVES. [1962] 22p.
Order from K-H $27.50 K-H 11436-e

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1954, no. 90, p. 107-117.

DESCRIPTORS: *Tobacco, *Molds, Control, *Plants.

Kovacevic, I.
THE BASIC PRINCIPLES OF THE CULTIVATION AND SELECTION OF HAZELNUTS, tr. by Spalatin Leonardo. 1962, 143p. 84 refs. PL-480 Agr.
Order from OTS $1.50 60-21634

Trans. of mono. Uzgajanje i Selekcija Ljesnjaka, Zagreb, 1955, 183p.

DESCRIPTORS: *Agriculture, *Plants, *Trees, Classification, Distribution, Ecology, Culture, Fertility, Chemical analysis.

Kump, M[arija].
THE INHERITANCE OF SOME QUANTITATIVE CHARACTERS IN WINTER BARLEY (Nasledjivanje Nekih Kvantitivnih Svojstava kod Ozimog Jecma) tr. by Vladimir Ivir. 1961 [31]p. 12 refs. PL 480 Agr.
Order from OTS $0.50 60-21697

Trans. of [Jugoslavenska Akademija Znanosti i Umjetnosti. Odjel za Prirodne Nauke]., RAD, 1953, v. 294, p. 245-268.

DESCRIPTORS: *Barley, Genetics, Mutations, Growth, *Fertility, Plants, Agriculture, Reproduction.

The genotypes of six-rowed winter barley were crossed with those of two-rowed winter barley to discover (1) why the yields of the six-rowed varieties vary more than the yields of the two-rowed varieties, (2) why the yields of the two-rowed varieties are more reliable than those of the six-rowed varieties, (3) if the yields of the six-rowed barley can be made more reliable by hybridization, and (4) if hybridization can increase the yields of the two-rowed varieties. The following characteristics were studied in both the parental genotypes and in their crosses: (1) tillering, (2) the number of internodes on the rachis, (3) the percentage of fertile spiklets on the ear, (4) the average weight of one kernal on the ear, and (5) the total yield of kernals per main ear. The hybridization of Hordeum vulgare

with Hordeum distichum resulted in six-rowed varieties of a better quality and more reliable yields. Two-rowed barley of higher fertility was obtained by selecting those transgressive variants from the crosses that had a higher average weight of one kernal on the ear.

Malinovskii, V. N.
MAIN TRENDS IN SORGHUM BREEDING WITH REGARD TO HETEROSIS (Selektziya Sorgo na Geterozis). 14 May 62, 22p. 9 refs. Trans. A-1347.
Order from OTS or SLA $2.60 62-25040

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962, v. 7, no. 2, p. 55-63.

DESCRIPTORS: *Plants, *Grasses, Cereals, Genetics, Fertility.

Nonaka, F.
ON THE RELATION BETWEEN THE STEM ROT CAUSED BY LEPTOSPHAERIA SALVINII AND THE RICE NEMATODE DISEASE, WHITE TIP, AND ON THE CHANGES OF THE RESPIRATION RATE AND ACTIVITIES OF RESPIRATORY ENZYMES OF THE WHITE TIP PLANTS. [1962] [13]p.
Order from SLA $1.60 62-10301

Trans. of [Kyushu Daigaku Nogakubu Gakugei Zasshi] (Japan) 1959, v. 17, p. 1-8.

DESCRIPTORS: Plants, *Rice, Diseases, *Fungus infections, *Nematodes, Parasitic infections, Respiration, *Enzymes, Oxidases, Catalase, Peroxidase.

The severity of rice stem rot (Leptosphaeria salvinii) was decreased when the plant had been affected with "white tip", the rice nematode disease caused by Aphelenchoides besseyi. Both respiration rate and activity of respiratory enzymes (ascorbic acid oxidase, cytochrome c oxidase, polyphenol oxidase, catalase, and peroxidase) of rice plant were found to be promoted when the latter was affected by the white tip disease. When compared the activities of the two polyphenol oxidases of leaves it was found that laccase activity was stronger than that of tyrosinase, and the polyphenol oxidase activity of lower leaf of a plant was stronger than that of the upper. It was concluded that the resistance against the stem rot of the white tip diseased plant was caused by the vigorous metabolism of the rice stem tissue, induced by the nematode invaded, during the season from tillering till harvest time. (Author)

Panov, P. Ts. and Boyanov, B. I.
USE OF INFRARED RAYS IN TOBACCO CURING. [1962] 10p.
Order from K-H $12.50 K-H 11433-c

Trans. of Tabak (USSR) 1959, v. 20, no. 4, p. 50-52.

DESCRIPTORS: *Tobacco, *Aging, *Infrared radiation.

Priol, J.
FLOWER, FERTILIZATION AND FERTILITY BIOLOGY OF THE APPLE TREE (Biologija Cvetja, Oplodbe in Rodnosti pri Jablani) tr. by Vanda Vidmar. 1962, 250p. 255 refs. PL-480 Agr.
Order from OTS $2.50 60-21691

Trans. of Zbornik za Kmetijstvo in Gozdarstvo (Yugoslavia) 1956, v. 2, 258p.

DESCRIPTORS: Agriculture, Plants, *Trees, Fruits, *Apples, *Fertility, *Pollen, *Chromosomes, *Bees.

Rakitin, Yu, V.
THE USE OF CHEMICAL COMPOUNDS AS AGENTS ACTING ON PLANTS. 30 Jan 62, 21p. 8 refs. JPRS: 12201.
Order from OTS $0.75 62-11124

Trans. of #Uspekhi Sovremennoi Biologii (USSR) 1961, v. 52, no. 2(5) p. 208-223.

DESCRIPTORS: *Plants, Chemicals, *Herbicides, *Growth substances, Inhibition, Stimulation, Physiology

This article is written in answer to numerous requests by scientific workers and representatives of production establishments to acquaint them with the activities of the K. A. Timiryazeva Laboratory of Stimulation and Inhibition of the Physiological Processes of Plants at the Institute of Plant Physiology of the USSR Academy of Sciences. (Author)

Sokol'skii, D. P.
AT THE ALTAI AGRICULTURAL INSTITUTE (V Altaiskom Sel'skokhozyaistvennom Instituta). 24 May 62, 13p. Trans. A-1350.
Order from OTS or SLA $1.60 62-25038

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962, v. 7, no. 2, p. 148-151.

DESCRIPTORS: *Agriculture, Universities, *Machines.

Szymanski, Stanislaw and Szczerbinski, Wieslaw.
BUDS AS INDICATORS OF VIGOR OF YOUNG PINES (Paczki Jako Wskaznik Potencjalu Zyciowego Mlodej Sosny) tr. by R. Dzieciolowski. 1962 [27]p. 9 refs. PL-480 Agr.
Order from OTS $0.50 60-21228

Trans. of Polskie Towarzystwo Botaniczne. Sekcja Dendrologiczna. Rocznik, 1955, v. 10, p. 275-304.

DESCRIPTORS: *Forestry, Plants, *Trees, *Pine, Growth.

Bud size, studied in normal conditions, decreases in the direction from the apex towards the base and within separate branches from the top to the base. Quantitative relations of buds on branches of different ranks and categories are subjected to the same regularities

and influences as above, i.e., the number of buds in apical groups of separate shoots decreases along the same direction as the decreasing size of buds. Growth of shoots within an individual is directly proportional to bud length; buds of smaller dimensions show less growth vigor than larger buds. In general that the greatest growth vigor and general vigor is characteristic of the apical part of the tree. This potentiality decreases towards the base and its reduction is expressed by a decrease in size and number of buds, also by the decreasing length of annual growth and the dying off and self-pruning of the lower branches and whorls.

Vasilenko, V. M.
LOSSES IN VOLATILE TOBACCO PRODUCTS DURING FERMENTATION. [1962] 15p.
Order from K-H $18.75 K-H 11401-H

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Pishchevaya Tekhnol[ogiya] (USSR) 1960, no. 5, p. 97-102.
Another trans. is available from OTS or SLA $1.10 as 61-20048 [1961] 9p.

DESCRIPTORS: *Tobacco, Processing, Oxidation, Carbon dioxide, Absorption, Determination, Vapor pressure, Moisture, Humidity, Temperature, Decomposition.

For abstract see Technical Translations 7: 718, 1962.

ASTRONOMY

ACADEMY OF SCIENCE USSR, BULLETIN OF THE INSTITUTE OF THEORETICAL ASTRONOMY, 1949, VOL. 4, NO. 3(56): [SELECTED ARTICLES]. [1961] [55]p. 36 refs. ACIC RR-40-A-I.
Order from OTS or SLA $5.60 62-15965

Trans. of Akademiya Nauk SSSR. Institut Teoreticheskoi Astronomii. Byulleten', 1949, v. 4, no. 3(56) p. 103-141.

DESCRIPTORS: *Astronomy, *Gravity, *Earth, Surface area, Ellipsoids, Mathematical analysis, *Terrestrial magnetism, Astronomical data, Scientific research, Integral equations, *Geodetic astronomy.

Contents:
A precise expression for the normal value of the total gradient of gravity and its components, by V. V. Ekimov
Gravimetric derivation of deflections of the vertical, by D. H. Khramov
Problem of the accuracy of Stokes formula, by D. V. Zagrebin.

Forlini, John B.
THE MOON AND ITS CHARACTERISTICS: BIBLIOGRAPHY. Apr 62 [41]p. 157 refs. LTIS Bibliography no. 15.
Order from OTS or SLA $4.60 62-25111

A listing of current Soviet published articles on the moon 1959-61.

DESCRIPTORS: *Moon, Astronomical data, Satellites, *Bibliography.

Iwanowska, Wilhelmina.
RADIOASTRONOMY: PROBLEMS AND PROSPECTS OF DEVELOPMENT IN POLAND. 4 May 62 [13]p. JPRS: 13653.
Order from OTS or SLA $1.60 62-24406

Trans. of Nauka Polska, 1961, v. 9, no. 2[34], p. 17-26.

DESCRIPTORS: *Radio astronomy, Astronomy, *Poland, Radio signals, Sources, Sun, Galaxies, Solar corona, Solar flares, Radio waves, Explosions.

Kap, V.
EXTINCTION. [1961] [42]p. 21 refs.
Order from SLA $4.60 62-10724

Trans. of Handbuch der Physik (Germany) n. d., 1st ed., v. 26, chap. 5, p. 504-530.

DESCRIPTORS: *Cosmic rays, *Attenuation, Earth, Atmosphere, Astrophysics.

Morchanov, Petelova, and others.
THE 4.5 cm SOLAR ENERGY OBSERVED ON THE DAY OF THE ANNULAR ECLIPSE OF THE SUN ON APRIL 4, 1958. 28 Mar 62 [6]p. MCL-1384.
Order from OTS or SLA $1.10 62-24467

Unedited rough draft trans. of[T'ien Wen Hsüeh Pao] (Chinese People's Republic) 1959, v. 7, no. 1, p. 1-3.

DESCRIPTORS: *Solar energy, *Solar eclipse, Solar corona, Sunspots, Instrumentation.

This observation was made under a combined group from the USSR Academy of Sciences and the Academia Sinica at an observation point on the Chinese island of Hainan. The coordinates of this point were $\varphi = 18^{o}\ 14'\ 34''$, and $\lambda = -7^{h}18^{m}02^{s}.86$. (Author)

Plechkov, V. M. and Razin, V. A.
RESULTS OF MEASURING THE INTENSITY OF RADIO RADIATION FROM DISCRETE SOURCES BY USING 3.2 AND 9.7 ON WAVELENGTHS. [1961] 6p. 5 refs. MDF P-109.
Order from OTS or SLA $1.10 62-23197

Trans. of mono. [paper presented at the] Conference on Questions of Cosmogony (Radio Astronomy) (no. 5). Trudy, Moscow, 1956, p. 430-435.

DESCRIPTORS: *Radio astronomy, Astronomy, *Radio signals, Radio waves, Intensity, Measurement, *Stars, Galaxies.

Measurements are reported of the radio radiation intensity from the Cassiopeia-A, Taurus-A and Cygnus-A sources by using 3.2 and 9.7 cm wavelengths. The measurements were made in the vicinity of Gor'kii (latitude, $\varphi = 56^{o}9.5'$) at the end of 1952 and the beginning of 1955. (Author)

Astrophysics

N. A. KOZYREV'S VIEW ON THE NATURE OF THE LUMINESCENCE OF THE VENUSIAN CLOUDS AND THE COMPOSITION OF THE VENUSIAN ATMOSPHERE. 8 Aug 61, 3p. 10 refs. AID Rept. 61-116; AD-263 664.
Order from OTS or SLA $1.10 61-28658

DESCRIPTORS: *Atmosphere, *Clouds, *Venus, Luminescence, Ionosphere, Chemical properties, Physical properties, *Gases, Carbon dioxide, Water vapor, *Formaldehyde, *Planetary atmospheres.

As a result of an analysis of 4 Soviet newspaper accounts of a report given by Kozyrev on 14 July 1961 to a scientific meeting at the Pulkovo Main Observatory, certain conclusions are drawn as to the "favor" in which Kozyrev is now held in Soviet academic circles.

NEWS ABOUT THE TEMPERATURE OF VENUS (Novoe o Temperature Venery) tr. by A. Pingell. 29 Jan 62, 3p. NRL trans. no. 882.
Order from OTS $0.50 62-11176

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, no. 6, p. 44, col. 3 and 4.

DESCRIPTORS: Planets, *Venus, Temperature, Thermal radiation.

Bogatov, G. B.
HOW A PICTURE OF THE OTHER SIDE OF THE MOON WAS OBTAINED. 19 Feb 62 [68]p. JPRS: 12543
Order from OTS or SLA $6.60 62-15844

Trans. of mono. (booklet) Kak Bylo Polucheno Izobrazhenie Obratnoi Storony Luny, Moscow/Leningrad, 1961, 64p.

DESCRIPTORS: *Moon, Photography, *Electrophotography, Satellite vehicles, Radio communication systems, Radio signals, Transmission, Television equipment, Video signals, Magnetic recording systems, *Satellite vehicle research, Extraterrestrial bases.

This booklet deals with the operating principles of the devices which made possible the pictures taken of the reverse side of the moon; with the role of radioelectronics in the conquest of the cosmos; with the photographing of the moon from aboard the interplanetary automatic station; with the transmission of this photography in electrical signals; and with those problems solved by Soviet scientists and engineers in the transmission and receipt of those signals. The booklet is intended for wide circles of radio enthusiasts. (Soviet publisher's note)

Breido, I. I., Markelova, A. A., and Shchegolev, D. E
RELIABLE IDENTIFICATION OF FEATURES ON THE FAR SIDE OF THE MOON FROM THE FIRST PHOTOGRAPHS [Vyyavlenie Dostovernykh Obbektov na Obratnoi Storone Luny po Ee Pervym Fotografeyam] tr. by B. W. Kuvshinoff. 24 Apr 62, 18p. 3 refs. APL/JHU TG 230-T290.
Order from OTS $0.50 62-11679

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 9, p. 30-40.
Another trans. is available from STS $10.65 as STS Trans-14, 21 Jan 62, 11p.

DESCRIPTORS: *Moon, Satellites, Astronomical data, *Mapping, Maps, *Aerial photographs, Photography, Lunar probes.

On the whole, the map of the far side of the moon should be treated as a schematic of the distribution of areas of different reflectivity rather than as a relief map. (Extract)

Kuz'min, A. D. and Salomonovich, A. E.
RESULTS OF OBSERVATIONS OF RADIO EMISSION FROM VENUS DURING 1961. 28 Feb 62, 2p. AID rept. 62-27; AD-273 608.
Order from OTS or SLA $1.10 62-23703

Abstract trans. of #Astronomicheskii Zhurnal (USSR) 1961, v. 38, no. 6, p. 1115-1117.

DESCRIPTORS: *Venus, Temperature, Rotation, Measurement, Radio signals, Radio astronomy, Astronomy, Extraterrestrial radio waves.

Data obtained at wavelengths of 4 and 8 mm and 3.3 cm show a regular increase of the brightness temperature with a relative increase of the illuminated part of the disk. The minimal values of brightness temperature found at wavelengths of 4 and 8 mm were $390^{o} \pm 120^{o}$K and $374^{o} \pm 75^{o}$K, respectively. Both minima appeared before true inferior conjunction. Brightness temperature observations of the illuminated part from 0.33 to 0.6 of the disk show values ranging from 500 to 600^{o}K. Linear extrapolation of the temperature for a totally dark disk at true inferior conjunction yielded $372^{o} \pm 55^{o}$K. The shifting of the brightness-temperature minimum from the point of inferior conjunction to the eastern elongation indicates that the rotation of Venus occurs in the same direction as its revolution around the sun. The shifting also supports the hypothesis that the rotation period is not equal to the revolution period. The wide variations in temperature may be attributed to changes in electron accumulations in the Venusian ionosphere. (Extracted)

Stepanov, V. E.
DEPENDENCE OF THE SOLAR MAGNETOGRAPH READINGS ON THE STRENGTH AND DIRECTION OF THE FIELD (Zavisimost' Pokazanii Solnechnogo Magnitografa ot Velichiny Napryazhennosti i Napravleniya Polya) tr. by M. Slade. [1962] [15]p. (foreign text included) 8 refs. [CSIRO] Trans. 5720.
Order from OTS or SLA $1.60 62-24627

Trans. of Akademiya Nauk SSSR. Krymskaya Astrofizicheskaya Obsevatoriya. Izvestiya, 1960, v. 23, p. 291-298.

DESCRIPTORS: *Sun, *Magnetic fields, Measurement, Intensity, Distribution, Magnetometers.

The interval of the variation of strength (H) for which the readings of the solar magnetograph are proportional to H cos γ was determined on the basis of the theory of formation of absorption lines in a magnetic field, arbitrarily orientated to the line of sight. It was found that for a finite width of the slit, equal to 0,035 A, for Fe line λ5250 A the signal is proportional to H cos γ if H≤200 gauss. For the Na line D_1 in the case of a longitudianl field and slits (width = 0,035 A) symmetrical to the center of the line at a distance of 0,057 A, the signal is proportional to H if H≤500 gauss. (Author)

Steshenko, N. V. and Khokhlova, V. L.
HELIUM EMISSION OF THE CHROMOSPHERIC FLARE OF 14 SEP 58 (Gelievaya Emissiya Khromosfernoi Vspyshki 14 Sentyabrya 1958 G.) tr. by M. Slade. [1962] [19]p. (foreign text included) 7 refs. [CSIRO] Trans. 5719.
Order from OTS or SLA $1.60 62-24626

Trans. of Akademiya Nauk SSSR. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1960, v. 23, p. 322-330.

DESCRIPTORS: *Solar flares, *Spectrographic data, *Helium, Spectrophotometers, Radio signals, Radio astronomy, Astronomy.

The emission lines λλ3965, 5016, 6678, 5876 and 4713 were studied in a flare on the disk. With the exception of λ5876, the above He I lines have no self-absorption. The intensities of optically thin lines were used for the determination of the population of the upper levels of the corresponding transitions and the estimation of the upper limit of population of the lower levels of these transitions (table). The outer absorbing layer projected on the flare and the self-absorption in the flare were taken into account when interpreting the profile of the D_3 line and calculating the population of the 2^3P and 3^3D levels. It is noted that the scattering of solar radiation cannot play a decisive role in the excitation of the higher levels of He I in the investigated flare. (Author)

Vitkevich, V. V.
THE INTERFERENCE METHOD IN RADIOASTRONOMY. 3 May 62 [18]p. 9 refs. USASIA Trans. Log no. 1321.
Order from OTS or SLA $1.60 62-25135

Trans. of Astronomicheskii Zhurnal (USSR) 1952, v. 29, no. 4, p. 450-462.

DESCRIPTORS: *Radio astronomy, Astronomy, *Radio interference, Interference, Sun, Solar corona, Stars, Galaxies, Radio signals, Radio waves, Antennas, Antenna radiation patterns, Modulation, Resolution, Illumination.

Gudjonsson, Haraldur.
A STUDY OF THE SMOKING HABITS OF ADOLESCENTS IN THE SECONDARY SCHOOLS OF REYKJAVIK. [1962] 10p.
Order from K-H $12.50 K-H 11279-e

Trans. of Laeknabladid (Iceland) 1961, v. 45, no. 1, p. 1-7.

DESCRIPTORS: *Smokes, *Tobacco, *Students, Iceland.

Leont'ev, A.
ENGINEERING PSYCHOLOGY (Inzhenernaya Psikhologiya). 9 May 62 [17]p. JPRS: 13703.
Order from OTS or SLA $1.60 62-24733

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, no. 20, p. 22-23.

DESCRIPTORS: *Human engineering, *Industrial psychology, Applied psychology, Automation.

Personnel and Training

BIOGRAPHIES OF SOVIET SCIENTISTS. 12 June 62 [15]p. JPRS: 14138.
Order from OTS or SLA $1.60 62-25185

Trans. of Akademiya Navuk BSSR, Minsk. Vestsi, 1961, no. 3, p. 108-114 and Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 5, p. 711-713.

DESCRIPTORS: *Scientific personnel, Personnel, *Medical personnel, Nervous system, Physiology, Morphology, Agriculture, *Forestry, Trees.

Contents:
Golub, D. M.; Khil'chenko, A. E.; Perakhod, V. I.

LENIN PRIZES IN SCIENCE AND ENGINEERING. 11 June 62 [19]p. JPRS: 14136.
Order from OTS or SLA $1.60 62-25183

Trans. from Izvestiya (USSR) 1962, no. 96(13950) p. 1-2 and Pravda, Moscow (USSR) 1962, 22 Apr, p. 2.

DESCRIPTORS: *Scientific personnel, *Engineering personnel, Personnel, Science, Engineering.

Contents:
Lenin prize awards for the most outstanding work in science and engineering
Reward for the most deserving, by V. Elyutin
Progress in science and engineering, by M. Keldysh.

NEW DOCTORS AND CANDIDATES, SEP 61. 27 Apr 62 [14]p. JPRS: 13586.
Order from OTS or SLA $1.60 62-24403

Trans. of Magyar Tudomany (Hungary) 1961, v. 6(68) no. 12, p. 770-773.

DESCRIPTORS: *Scientific personnel, Scientific research, Industrial research, Medical research, Agriculture, Mathematics, Social sciences.

Markin, N.
A RADIO AND CHEMICAL RECONNAISSANCE SQUAD IN ADVANCE ACTION. 19 Mar 62 [5]p. JPRS: 13106.
Order from OTS or SLA $1.10 62-23622

Trans. of Voennyi Vestnik (USSR) 1961 [v. 41] no. 12, p. 98-99.

DESCRIPTORS: *Radiological warfare, *Chemical warfare, *Armed Forces maneuvers, Military personnel.

Psychology

PROBLEMS OF HUMAN PSYCHOLOGY IN WORKING WITH APPARATUS AND AS STUDIED BY APPARATUS. 28 Mar 62 [26]p. (2 figs. omitted) 17 refs. JPRS:13212.
Order from OTS or SLA $2.60 62-23781

Trans. of Voprosy Psikhologii (USSR) 1961 [v. 7] no. 3, p. 47-59 and 171-176.

DESCRIPTORS: *Psychology, *Industrial psychology, *Psychometrics, Attenuation, Perception, Motor reactions, *Teaching machines.

Contents:
Experience in the psychological study of operators' activity, by V. V. Suvorova and others
Multiple-purpose portable apparatus for study and demonstration of human psychophysiological characteristics, by L. I. Umanskii and others.

REPORTING HANDWRITING ANALYSIS: [SELECTED] ITALIAN AND FRENCH ARTICLES. 23 Sep 60 [40]p. (9 figs. omitted) 12 refs. JPRS: 3976.
Order from OTS or SLA $3.60 60-31783

Trans. of Criminologia (Italy) 1959 [v. 12, no. 2] p. 119-149.

DESCRIPTORS: *Graphology, Criminology.

Contents:
Handwriting analysis reporting, an inquiry, by Pietro Fredas
The signature and its geometric projection, a new process in expert analysis, by Paul Brosson (reprint from Revue Internationale de Police Criminelle [sic] 1959, Feb)
Handwriting analysis report by Emilio Oggioni
The opinion of the great Mortara on handwriting analysis reports (excerpt from mono. Trattato di Diritto Processuale Civile, by Lodovico Mortrara)
Plastography, by Pietro Fredas.

THE STATUS OF PSYCHOLOGY IN HUNGARY. 28 Apr 61 [81]p. JPRS: 8173.
Order from OTS or SLA $8.10 62-19210

Trans. of Magyar Pszichologiai Szemle [sic] (Hungary) 1960, v. 17, no. 3, p. 257-317.

DESCRIPTORS: Conferences, *Psychology, Philosophy, *Applied psychology, *Criminology, Learning, Psychotherapy, *Children, *Education, *Labor.

Contents:
Initial accomplishments of the committee on psychology, by Pal Gegesi Kiss
Tasks of the subcommittee on philosophical psychology by Laszlo Matrai
Tasks of the subcommittee on general, experimental, and community psychology, by Lajos Kardos
The position of medical psychology, by Bela Horanyi
Tasks of the subcommittee on criminal psychology, by Miklos Kadar
On the tasks of art psychology, by Gabor O. Pogany
Tasks of the subcommittee on psychology of therapeutical pedagogy, by Gusztav Barczi
Tasks of the subcommittee on educational psychology, by Ferenc Lenard
Tasks of the subcommittee on methodology, by P. Lucy Liebermann
Activity of the institute for child psychology and tasks of the subcommittee on labor psychology, by Imre Molnar
General discussion.

THE WORK OF THE PSYCHOLOGICAL COMMITTEE OF THE HUNGARIAN ACADEMY OF SCIENCE IN THE YEAR 1960: NATIONAL ACHIEVEMENTS IN THE FIELD OF PSYCHOLOGY IN 60. 28 May 62 [12]p. JPRS: 13891.
Order from OTS or SLA $1.60 62-24981

Trans. of Magyar Pszichologiai Szemle [sic] (Hungary) 1961, v. 18, no. 4, p. 417-436.

DESCRIPTORS: *Psychology, Medical research, Hungary.

Ayrapet'yants, E. Sh.
THE PRINCIPLE OF TEMPORARY CONNECTIONS IN THE PHYSIOLOGY OF INTEROCEPTION. [1961] 20p. (7 figs. omitted) 15 refs.
Order from OTS or SLA $1.60 62-15050

Trans. of Voprosy Fiziologii Interotseptsii (USSR) 1952, v. 1, p. 5-23.

DESCRIPTORS: *Neuromuscular transmission, *Conditioned reflex, Interception, Growth, *Motor reactions, Stimulation, Physiology, Urine, Excretion, Temperature, Stomach, Secretion.

Gershuni, G. V.
DISCRIMINATION OF COMPLEX STIMULI BY THE AUDITORY ANALYZER OF MAN WITH INCREASING AMOUNTS OF INFORMATION. [1961] 13p. (Illus. table omitted).
Order from OTS or SLA $1.60 62-15043

Trans. of #Fiziologicheskii Zhurnal SSSR, 1957, [v..43], no. 11, p. 1086-1097.

DESCRIPTORS: *Analyzers (Psychology), Stimulation, *Conditioned reflex, Selections, Perception, *Statistical analysis, Sound, Light, Reaction (Psychology), Neuromuscular transmission, Information theory, Auditory signals, Visual signals.

The importance of an estimate not only of the physical complexity (number of components) of the individual stimulus, but also the statistical complexity of all combinations of stimuli has been emphasized. The question of the quantitative appraisal of statistical complexity of a stimulus has been examined, employing certain conceptions of the information theory. Data of the investigation of the discrimination by man of the auditory stimuli have been cited. These stimuli were in combinations in which 64 and 81 equally probable combination of characteristics of stimuli were possible. The combination of features of the stimulus in one series of experiments has been accomplished by 2 gradations of 6 qualities of the auditory signal, in the other, by 3 graduates of 4 qualities of the signal. The results of the investigation show more rapid training and more nearly complete degree of discrimination of stimuli, which entered into the association formed on the basis of 2 graduations of each characteristic of the sound. (Author)

W. M.
CRIME DETECTION WITH THE AID OF SCRIPT ANALYSIS. 10 Mar 60, 10p. (22 figs. omitted). JPRS: 3032.
Order from OTS or SLA $1.10 60-31069

Trans. of der Polizeibeamte (Switzerland) 1959, no. 20, p. 308-312.

DESCRIPTORS: *Criminology, *Graphology, Switzerland

BIOLOGICAL SCIENCES

THE CONGRESS OF THE CPSU (NO. 22) AND THE TASKS OF THE BIOLOGICAL SCIENCES. 26 Apr 62 [14]p. JPRS: 13567.
Order from OTS or SLA $1.60 62-24253

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1962, v. 27, no. 1, p. 3-12.

DESCRIPTORS: Scientific organizations, *Communism, *Biology.

BIOMEDICAL ASPECTS OF SOVIET SPACE RESEARCH. 27 Mar 62 [29]p. JPRS: 13244.
Order from OTS or SLA $2.60 62-23652

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, no. 167, p. 3; Sovetskaya Rossiya (USSR) 1961, 19 Sep, p. 4; Izvestiya (USSR) 1961, no. 184(13730) p. 6; Pravda, Moscow (USSR) 1961, no. 222(15712) p. 6; Pravda Vostoka (USSR) 1961, 13 Aug.

DESCRIPTORS: *Space medicine, *Weightlessness, *Telemetering, Satelite vehicles, Bioelectronics, Astronauts, Space flight, Physiology.

Contents:
Biotelemetering and flight into space, by R. Baevskii
Man's second flight into space
Twenty-four-hours of weightlessness
How the flight went
The training of astronauts,. by N. Gurovskii
Some of the political significance of Soviet space flights, by V. Parin
Space flight -- from dream to reality, by N. Agadzhanyan.

ELECTRONIC TECHNIQUES IN PHYSIOLOGY. 27 Apr 62 [28]p. 29 refs. JPRS: 13590.
Order from OTS or SLA $2.60 62-24389

Trans. of #Fiziologicheskii Zhurnal SSSR, 1961, v. 47, no. 11, p. 1432-1444.

DESCRIPTORS: *Electronic equipment, *Physiology, Plethysmography, Blood pressure, Circulatory system, Photographic recording systems, Recording devices.

Contents:
Electronic pneumographic, plethysmographic, and blood pressure recording techniques, by K. Sh. Nadareishvili
Multichannel photo-electronic rheograph, by V. V. Suchkov and V. G. Filimonov
Recording photo-plethysmograph, by V. S. Moshkevich and I. I. Valikanov.

INTEROCEPTORS: CONCLUSIONS, BIBLIOGRAPHY AND [PARTIAL] TABLE OF CONTENTS. 11 May 62 [177]p. 2149 refs. JPRS: 13727.
Order from OTS or SLA $12.50 62-24728

Partial trans. of mono. Interotseptory, Moscow, 1960.

DESCRIPTORS: *Chemoreceptors, *Proprioception, *Temperature perception, Nervous system, Reflexes, *Motor reactions, *Bibliography.

PROBLEMS OF ENDOCRINOLOGY [AND HORMONE THERAPY] 1961, VOL. 7, NO. 6: SELECTED ARTICLES. 28 Feb 62 [42]p. 108 refs. JPRS: 12726.
Order from OTS or SLA $4.60 62-23327

Trans. of Problemy Endokrinologii i Gormonoterapii (USSR) 1961, v. 7, no. 6, p. 15-19, 43-46, 105-116

DESCRIPTORS: *Endocrine glands, Physiology, Pathology, *Hormones, Therapy, *Hypothalamus, *Pituitary gland, Secretion, *Ionization, Proteins, Blood, Serum, Chemoreceptors, Reflexes, Conditioned reflex.

Contents:

The problem of hypothalamico-hypophyseal disorders from the effect of ionizing radiation, by N. P. Smirnova
The effect of the somatotropic hormone of the hypophysis on the protein composition of blood serum and the inflammatory process in irradiated animals by R. R. Bagramyan
Reception in endocrine glands (review) by P. M. Kaplan
Reception in endocrine glands, by P. M. Kaplan, Moscow, 1961: book review by L. M. Gol'ber.

Annamuradov, N.
THE EFFECT OF HEALTH RESORT MINERAL WATER ON THE ORGANISM. 21 May 62 [9]p. JPRS: 13880.
Order from OTS or SLA $1.10 62-24987

Trans. of mono. Kurort Archman i Ego Tselebnye Svoistva (The Archman Spa and its Healing Properties) Ashkhabad, 1960, p. 39-47.

DESCRIPTORS: *Health resorts, Physiology, *Therapy, Water.

Data are reviewed that were gathered by Soviet scientists since 1933 on the physiological effects of drinking and bathing in the mineral waters from the Archman Spa. Immersion in the water generally tends to normalize the blood pressure (i.e., to lower high blood pressure and to raise low blood pressure). Experiments on warm- and cold-blooded animals showed that the changes in the activity of the cardio-vascular system caused by immersion in the water are due to reflex acts, conditioned by the action on the skin of the whole mass, temperature, and gases of the water, are not by the resorption of any components (such as hydrogen sulfide). Single immersions generally induce leukocytosis, neutrophilia, eosinophilia, lymphopenia and monopenia. An increase in blood hemoglobin and erythrocytes is particularly marked in patients with a low erythrocyte count. Gases emitted by the spring cover the body in a solid layer and result in a light mechanical massage on the skin, toning up the nervous system (particularly its autonomic functions) and stimulating the activity of the heart and vascular motor centers. Over indulgence in bathing generally worsens the patients health, produces a jaded feeling, exhaustion, loss of appetite and irritability. Drinking Archman water stimulates the gastric glands and raises the acidity of the gastric juices, stimulates the secretions of the liver and pancreas, and increases the acidity of the urine and decreases its ammonia.

Azimov, G. I., Orlov, A. F., and Belugina, O. P.
FACTORS GOVERNING MILK SECRETION (Sekretsiya Moloka i Ee Zakonomernosti). May 62 [20]p. 6 refs. RTS 2084.
Order from OTS or SLA $1.60 62-25464

Trans. of Zhivotnovodstvo (USSR) 1961 [v. 23] no. 1, p. 40-48.

DESCRIPTORS: *Milk, *Mammary glands, Secretion, Synthesis, Radioactive isotopes, *Hormones, *ACTH, *Pituitary hormones, Amines, Barbiturates.

Injections of radioisotopes of phosphorus, calcium, and sulfur into the mammary gland duct system of goats showed that these substances pass from the udder to the blood stream and then from the blood into the milk. When methionine labelled with sulfur and casein labelled with phosphorus were injected, only the inorganic labelled substances were at first found in the blood. This indicates that conditions in the mammary gland induce a rapid splitting of organic molecules. The passage of these elements into the blood is increased by mechanical stimulation of the mammary and by the injection of pituitrin and phenamine. Sodium amytal and ATCH inhibit the process. It is concluded that the synthesis of milk constituents is accompanied by the reabsorption of the constituents into the blood, and that the functions of the mammary gland are regulated by nervous and neurohumoral activity. The fact that a residue of milk in the udder is necessary for further synthesis, as well as the fact that synthesis is greatest the first 2 or 3 hours after milking, is explainable in terms of this reabsorption process.

Chkhaidze, L. V.
ON THE PHYSICAL TRAINING OF THE COSMONAUT. 4 June 62 [7]p. JPRS: 13996.
Order from OTS or SLA $1.10 62-24972

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1961, v. 24, no. 12, p. 907-909.

DESCRIPTORS: *Physical fitness, Space medicine, Mathematical analysis, Mathematical prediction, *Astronauts.

We were able to learn by detailed mathematical analysis that the deterioration, for example in this differentiation of efforts which constitutes the basic biomechanical task of the man located in an enlarged gravitational field, is subject to a definite law, expressable by the equation: $\Delta F = k \ln g$, where ΔF is the deterioration of coordination of a given movement (i.e., the required differentiation of efforts), ln g is logarithm of the magnitude of stress expressed by the corresponding acceleration of the gravity force, k is a certain constant coefficient depending, as may be easily seen, upon the condition and training of the individual located in the given field, as well as upon the degree of his mastery of the movement being executed. It was also established that if a definite movement is systematically performed in a changed gravitational field (for example, an increased one), then the initial disturbance of its coordination will give way to its restoration. (Extract)

Galea, V., Gagiu, M., and Pitea, I.
MODIFICATION OF GLUTATHIONE IN THE LIVER AND SPLEEN AND OF THE LIVER VITAMIN A CONTENT IN RATS FED ON DIETS CONTAINING SYNTHETIC FOOD DYES (Modificarea Glutationului in Ficat si Splina si a Continutului de Vitamina A, in Ficatul Sobolanilor Alimentati cu Dieti Continind Coloranti Alimentari Sintetici). 27 June 61 [7]p.
JPRS: 9530.
Order from OTS or SLA $1.10 62-19390

Trans. of Farmacia (Rumania) 1961, v. 9, no. 2, p. 89-92.

DESCRIPTORS: *Glutathione, *Vitamin A, *Liver, *Spleen, Dyes, Tartrates, Diet, *Food.

Experiments on young rats with a diet containing tartrazine in the amount of 1.32 g/kg of diet (30 mg/rat) for a period of 200 days (6 g tartrazine) did not produce any modification of the liver vitamin A content, and only a slight modification of glutathione. The same experiments made with P.D.A.B., 0.75 g/kg diet (15 mg/rat) caused a marked modification after only 10 days (0.15 g), vitamin A disappearing completely in the liver, while glutathione increased significantly. (Author)

Hirvonen, Leo, Paavilainen, T. O. A., and Peltonen, T.
SMOKING AND FLICKER FUSION THRESHOLD. [1962] 8p.
Order from K-H $10.00 K-H 11517-b

Trans. of S[o]tilaslaak[etieteellinen] Aikak[auslehti] (Finland) 1961, v. 36, p. 62-68.

DESCRIPTORS: *Smokes, Tobacco, *Visual thresholds.

Ivanov, K. P.
THERMOREGULATION IN BATS. 17 Apr 62 [9]p.
JPRS: 13494.
Order from OTS or SLA $1.10 62-24000

Trans. of Priroda (USSR) 1961 [v. 50] no. 12, p. 109-110.

DESCRIPTORS: *Bats, Mammals, Circulatory system, *Body temperature, Control.

Kolar, M., Sava, J., and Budesinska-Komarkova, M.
CHANGES IN THE BLOOD SUPPLY TO THE MUSCLES OF THE DISTAL EXTREMITIES AFTER PHYSICAL EFFORT COMBINED WITH SMOKING. Feb 61, 6p.
Order from K-H $7.50 K-H 10643-b

Trans. of Sborn[ik] Lek[arsky] (Czechoslovakia) 1960, v. 62, p. 185-188.

DESCRIPTORS: *Blood circulation, *Muscles, *Exercise, *Tobacco, Cigarettes.

Koll, W. and Schutz, R. M.
EFFECTS OF NICOTINE ON MONO- AND POLYSYNAPTIC REFLEXES IN THE LOW-SPINAL CAT. July 61, 31p.
Order from K-H $38.75 K-H 11071-a

Trans. of Archives Internationales de Pharmacodynamie et de Thérapie (Belgium) 1960, v. 129, p. 343-363.

DESCRIPTORS: *Nicotine, *Reflexes.

Konyukhov, B. V. and Lishtvan, L. L.
FORMATION OF WATER-SOLUBLE ANTIGENS OF THE CRYSTALLINE LENS IN EMBRYOGENESIS. [1962] [10]p. 25 refs.
Order from OTS or SLA $1.10 62-23282

Trans. of Zhurnal Obshchei Biologii (USSR) 1959, v. 20, no. 4, p. 299-307.

DESCRIPTORS: *Embryos, Lenses, Tissues (Biology), *Antigens, Proteins, Biochemistry, *Crystalline lens.

A study of the process of antigen formation in the developing crystalline lens of the chick showed that establishment of its antigen structure is complete after seven days of incubation. During this period of development all the seven antigens characteristic of the definitive lens are formed. A very small amount of antigen of the definitive lens was found in the lens placode of the embryos in the 23-25 somite stage of development. At earlier stages in the development of chick embryos (9-10 and 16-18 somites), viz. before the formation of the lens placode, we were unable to discover the antigens that are specific for the lens of the adult hen. However, when a suspension of the tissue of the lens ectoderm, taken from embryos at the 16-18 somite stage, was used in the reaction with antiserum against antigens of the definitive lens, a faint diffuse turbidity of the agar column was observed. When similar material was used from embryos at the 9-10 somite stage, there was no perceptible diffuse turbidity of the agar, even in the controls. The results suggest that at the early stages of development (up to the formation of the lens placode) either a very insignificant amount of antigen of the definite lens is formed in the cells of the ectoderm, or a precursor of it is formed with different specific determinant groups. Active synthesis of the antigens of the definitive lens probably begins during the period when the lens placode is forming. (Author)

Krylov, S. S.
THE EFFECT OF SODIUM CYANIDE, ACETYLCHOLINE, AND NICOTINE ON THE CHEMORECEPTORS OF THE CAROTID SINUS. Oct 60, 9p.
Order from K-H $11.25 K-H 10402-e

Trans. of #Fiziol[ogicheskii] Zh[urnal] SSSR, 1960, v. 46 [no. 4] p. 429-433.

DESCRIPTORS: *Sodium compounds, *Cyanides, *Acetylcholines, *Nicotine, *Chemoreceptors, *Carotid sinus.

Lang, F. and Mokry, H.
CIRCULATION AND DIURESIS UNDER NICOTINE. [1962] 9p.
Order from K-H $11.25 K-H 3178-d

Trans. of Wiener Med[izinische] Wochensch[rift] (Austria) 1954, v. 104, no. 18, p. 357-359.

DESCRIPTORS: *Nicotine, *Diuretics, *Blood circulation.

Makarov, P. O.
BIOPHYSICS AT THE LENINGRAD UNIVERSITY (Biofizika v Leningradskom Universitete). 28 Mar 62, 18p. Trans. A-1338.
Order from OTS or SLA $1.60 62-23857

Trans. of Leningrad U. Vestnik (USSR) 1961 [v. 16, no. 21]. Seriya Biologii, no. 4, p. 156-159.

DESCRIPTORS: *Universities, *Biophysics, *Cybernetics, Human engineering, *Physiology, *Nervous system, Sensory perception, Conditioned reflex, Reaction (Psychology, Analyzers (Psychology).

Nasz, Istvan, Lengyel, Anna, and Dan, Pal.
ADAPTATION OF DETROIT-6 TISSUE CULTURE TO VARIOUS ANIMAL SERA. 5 Jan 62 [9]p. JPRS: 11821.
Order from OTS or SLA $1.10 62-19666

Trans. of Magyar Tudomanyos Akademia Biologiai es Orvosi Tudomanyok Osztalyanak Kozlemenyei (Hungary) 1961, v. 12, no. 3, p. 311-315.

DESCRIPTORS: *Serum, *Viruses, Microbiology, *Culture media.

Human serum nurturing a Detroit-6 tissue culture was gradually replaced by the sera of other animals. The cultures adapted successfully to rabbit and bovine sera, but not to horse or colt sera. The proliferation of cells cultured on rabbit serum was 140 to 150% that of cells cultured on human serum. Proliferation on bovine serum was 60 to 80% of the rate on human serum. Both rabbit- and bovine-adapted cells could be readapted to human serum. Titrations with viruses demonstrated that the adaptations did not significantly alter the susceptability of the tissue cultures to adenoviruses.

Peitzsch, A.
ON THE RETENTION OF SMOKE COMPONENTS DURING CIGARETTE SMOKING. [1962] 16p.
Order from K-H $20.00 K-H 11296-a

Trans. of [die] Pharmazie (Germany) 1961, v. 16, no. 4, p. 217-222.

DESCRIPTORS: *Tobacco, *Cigaretts, *Smokes.

Rosenfeld, L. E. and Lands, L. J.
VARIATIONS WITH AGE OF THE CHOLESTERINE, SATURATED AND UNSATURATED PHOSPHATIDES IN THE CENTRAL NERVOUS SYSTEM OF RABBITS. [1962] [9]p. 15 refs.
Order from OTS or SLA $1.10 62-14793

Trans. from [Ukrayins'kyi Biokhimichnyi Zhurnal] (USSR) 1940, v. 16, no. 2.

DESCRIPTORS: Age factors, *Nervous system, Brain, *Cholesterol, *Phospholipids, Lipids, Rabbits.

Cholesterine content in the different parts of rabbit brain increases with age, and more rapidly in the white substance than in the gray. The content of saturated and unsaturated phosphatides have the tendency to increase with age, however not evenly in the different age groups and rather less intensively than was observed in the case of cholesterine. In adult animals the amount of saturated and unsaturated phosphatides diminishes. (Author)

Biochemistry

RECENT SOVIET WORK IN MEDICAL CHEMISTRY. 1 June 62 [51]p. 135 refs. JPRS: 13953.
Order from OTS or SLA $5.60 62-25000

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 1, p. 3-19.

DESCRIPTORS: *Biosynthesis, *Collagen, Proteins, Metabolism, *Tissues (Biology), *Liver, Iron, *Radiobiology, Radiation effects, Mice.

Contents:
Biosynthesis and fibrillogenesis of collagen proteins, by V. I. Mazurov
Disturbance of the metabolism of tissue iron in liver from irradiated mice, by G. V. Voskoboinikov.

Cerniani, Aldo.
COMPARATIVE THERMAL DECOMPOSITION OF SOME MONOSACCHARIDES, OLIGOSACCHARIDES AND POLYSACCHARIDES. [1962] 10p.
Order from K-H $12.00 K-H 5876-a

Trans. of Annali di Chimica (Italy) 1951, v. 41, p. 455-464.

DESCRIPTORS: *Saccharides, Pyrolysis.

Cerniani, Aldo.
THE THERMAL DECOMPOSITION OF STARCH. [1962] 14p.
Order from K-H $18.00 K-H 6255-b

Trans. of Annali di Chimica (Italy) 1951, v. 41, p. 293-308.

DESCRIPTORS: *Starches, Pyrolysis.

Dupra, L. and Tavagno, L.
BRONCHIAL CHANGES CAUSED BY ACROLEIN AND VITAMINS. [1962] 24p.
Order from K-H $30.00 · K-H 5795-b

Trans. of Annales d'Oto-Laryngologie (France) 1954, v. 71, p. 257-274.

DESCRIPTORS: *Lungs, *Acroleins, *Vitamins

Gubenko, T. L.
THE PREPARATION OF GAMMA-GLOBULIN FROM PLACENTAL SERUM BY THE RIVANOL-ALCOHOL METHOD UNDER INDUSTRIAL CONDITIONS. [1962] 6p.
Order from ATS $8.50 ATS-29P60U

Trans. of Ukrayin[s'kyi] Biokhim[ichnyi] Zhur[nal] (USSR) 1961, v. 33, no. 1, p. 14-20.

DESCRIPTORS: *Blood proteins, Preparation, *Fetal membranes, *Serum.

Pasynskii, A. G.
CERTAIN PROBLEMS OF BIOCHEMICAL CYBERNETICS. 22 June 62 [12]p. 17 refs. JPRS: 14236.
Order from OTS or SLA $1.60 62-25490

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 4, p. 25-31.

DESCRIPTORS: *Cybernetics, *Biochemistry, Physiology, Chemical reactions.

Poroshin, K. T., Kozarenko, T. D. and others.
INVESTIGATION OF THE COLLAGENASE ACTION ON SYNTHETIC SUBTRATES, tr. by I. Gawronska. 7 Nov 61 [8]p. 7 refs. Courtaulds Misc. Lit. 3392; NLL M.3526.
Order from OTS or SLA $1.10 62-24648

Trans. of #Biokhimiya (USSR) 1961, v. 26, no. 2, p. 244-248.

DESCRIPTORS: *Collagenases, *Decomposition, *Peptides, *Glycine, Imines, Enzymes, Biochemistry.

The methyl esters which were prepared of cbz-glyc-pro-opro-(glyc-pro-pro)$_2$, cbz-(glyc-pro-opro)$_2$-(glyc-pro-pro)$_2$, cbz-glyc-ala-pro-opro and cbz-glyc-ala-pro-pro were found to be substrates for collagenase. The splitting by collagenase of five previously synthesized substrates; methyl esters of cbz-ala-glyc-pro-pro, cbz-ala-glyc-pro-opro, cbz-pro-ala-glyc-pro, cbz-(glyc-pro-opro)$_2$-OCH$_3$ and cbz-pro-glyc-glyc-glyc-pro, was investigated. The peculiarities of the structure of the peptides, which are collagenase substrates, are discussed. (Author)

Savyalov, V.
HYDROGEN SULPHIDE FERMENTATION IN MEDICINAL BLACK MUDS. [1961] [12]p.
Order from SLA $1.60 61-10891

Trans. of Zentralblatt fllr Bakteriologie, Parasitenkunde und Infektionskrankheiten. [Abt. 1. Originale] 1913, v. 29, no. 15/17, p. 440-447.

DESCRIPTORS: *Hydrogen compounds, *Sulphides, Biochemistry, Sulfates, Reduction, *Therapy, *Soils, Iron compounds, *Actinomyces. *Fermentation.

Schievelbein, H., Werle, E., and Jacoby, W.
LIBERATION OF 5-HYDROXYTRYPTAMINE (SEROTONIN) FROM TISSUES BY NICOTINE. [1962] 3p.
Order from K-H $3.75 K-H 11647

Trans. of [die] Naturwissenschaften (West Germany) 1961, v. 48, no. 18; p. 602-603.

DESCRIPTORS: *Nicotine, *Serotonin, Tissues (Biology).

Severin, S.
NEW DEVELOPMENTS IN BIOCHEMISTRY. 15 June 62 [12]p. JPRS: 14129.
Order from OTS or SLA $1.60 62-25175

Trans. from Pravda, Moscow (USSR) 1961, 16 Sep, p. 6.

DESCRIPTORS: *Biochemistry, Proteins, Enzymes, Nucleic acids, Energy.

Sisakyan, N. M.
BIOCHEMICAL FUNCTIONS OF CELLULAR STRUCTURES (Biokhimicheskie Funktsii Kletochnykh Struktur). 14 May 62 [33]p. 104 refs. NIH no. 5-21-62.
Order from OTS or SLA $3.60 62-25140

Trans. of #Uspekhi Sovremennoi Biologii (USSR) 1961, v. 51, no. 2, p. 129-152.
Another trans. is available from OTS or SLA $3.60 as 61-27931, JPRS-4878, 15 Aug 61 [32]p.

DESCRIPTORS: *Cells(Biology), Biochemistry, *Albumins, Metabolism, *Nucleic acids, Energy.

For abstract see Technical Translations 6: 630, 1961.

Yakovlev, N. N.
THE TASKS OF PHYSIOLOGICAL CHEMISTRY IN THE LIGHT OF THE NEW PROGRAM OF THE COMMUNIST PARTY USSR. 11 June 62 [10]p. JPRS: 14069.
Order from OTS or SLA $1.10 62-25161

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 2, p. 121-125.

DESCRIPTORS: *Physiology, Biochemistry.

Zirinis, M. Phédon.
THE FRACTIONATED DETERMINATION OF URINARY VOLATILE PHENOLS WITH THE AID OF PHENITRAZOLE. [1962] 6p. 4 refs.
Order from SLA $1.10 62-14533

Trans. of Annales Pharmaceutiques Françaises, 1961, v. 19 [no. 9/10] p. 604-[609].

DESCRIPTORS: *Biochemical tests, *Fractionation, Determination, *Phenols, *Urine, Thiazoles, Reagents.

The diazo-coupling to phenitrazole applied to the urinary volatile phenols under some particular conditions of extraction permit their fractionated determination. The sensitivity of the determination is satisfactory under the condition that the quantity of p-cresol present may be at least equal to that of phenol. (Author)

Botany

Gej, Branislaw.
TESTS DEALING WITH GAS EXCHANGE MEASUREMENT DURING THE FERMENTATION OF VIRGINIA TOBACCO IN WARBURG APPARATUS. [1962] 17p.
Order from K-H $21.25 K-H 11151

Trans. of Rocz[niki] Nauk Roln[iczych. Seria] A: [Roslinna] (Poland) 1960, v. 81, no. 4, p. 1073-1084.

DESCRIPTORS: *Mannometers, Gasses, *Tobacco, Tests, *Fermentation.

Giovannozzi, M.
STUDIES ON THE FERMENTATION OF TOBACCOS. [1962] 19p.
Order from K-H $23.75 K-H 11517-a

Trans. of il Tabacco (Italy) 1948, v. 52, no. 582, p. 3-15.

DESCRIPTORS: *Tobacco, Chemical properties, *Fermentation.

Pontovich, V. E.
PLACENTA AND SEED CULTURE UNDER STERILE CONDITIONS AS A METHOD OF STUDY OF METABOLISM OF THE FORMING FRUITS (Kul'tura Platsenty i Semyan v Steril'nykh Usloviyakh Kak Metod Izucheniya Metabolisma Formiruyushchikhsya Plodov). 27 Nov 61, 12p. (4 figs. omitted) 9 refs. Trans. A-1320.
Order from OTS or SLA $1.60 62-13451

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26] no. 2, p. 233-238.

DESCRIPTORS: *Plants, Growth, *Reproduction, Seeds, *Culture media, Metabolism, Glucose, Organic acids.

Cultivation of the placenta of the oil poppy, isolated from the fruit, on an artificial nutrient medium, showed a great physiological role of its tissues in the formation and development of seeds. Ovules of the poppy with 1-to 2-celled proembryo are not able to develop on an artificial nutrient medium, which contains different physiologically active substances. But the development of ovules, of the same age, proceeds normally on the placenta. The seeds, developed on the placenta, synthesize oil. When ripe, they produce sprouts. Experiments with the use of glucose 1.6-C^{14} have shown that under conditions of culture the placenta intensively absorbs glucose from the nutrient medium. Part of the absorbed glucose undergoes decomposition, in the process of which are formed keto acids, volatile acids (acetic), organic di- and tricarboxylic acids and amino acids. The latter circumstance indicates that processes of amination and transamination proceed in the placenta tissues. Substances, which are formed in the placenta during the process of conversion of glucose move into the seeds. It is assumed that the acetic acid, which proceeds from the placenta, is utilized by the seeds for the synthesis of oil. (Author)

Popova, L. P.
COMPOSITION OF SMOKE FROM TOBACCOS SUBJECTED TO DIFFERENT FERMENTATION CONDITIONS. [1962] 8p.
Order from K-H $10.00 K-H 11538-c

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Pishchevaya Tekhnol[ogiya] (USSR) 1961, no. 3, p. 97-101.

DESCRIPTORS: *Tobacco, *Smokes, Analysis, *Fermentation

General Biology

Berg, R. L. and Timofeev-Resovskii, N. V.
PATHS OF EVOLUTION OF THE GENOTYPE (O Putyakh Evolyutsii Genotipa). 2 Oct 61 [29]p. 117 refs. JPRS: 10292.
Order from OTS or SLA $2.60 61-28731

Trans. of #Problemy Kibernetiki (USSR) 1961, no. 5, p. 183-197.

DESCRIPTORS: *Genetics, *Mutations, Population, *Chromosomes.

It is shown that the knowledge that has been acquired by modern genetics, and the results of special observations and experiments, including studies of differences in structure and mutability of the genotype among different groups of organisms indicate that even certain properties of the genotype itself may be suject to evolution by natural selection. The exposition is broken down into two parts, the first of which is devoted primarily to the problem of the evolution of the genotype structure and the genes themselves, while the second is devoted to the evolution of mutability.

Sisakyan, N.
BIOLOGY AND LIFE. 20 June 62 [14]p. JPRS: 14204.
Order from OTS or SLA $1.60 62-25506

Trans. from Pravda, Moscow (USSR) 1962, 19 Jan, p. 3.

DESCRIPTORS: *Biology.

The accomplishments of Soviet biologists are praised.

Medical Specialties and Equipment

RECENT ACTIVITIES IN SOVIET MEDICINE.
11 May 62 [28]p. JPRS: 13751.
Order from OTS or SLA $2.60 62-24726

Trans. of Meditsinskii Rabotnik (USSR) 1962 [v. 25] 2 Feb, p. 1-2; Problemy Tuberkuleza (USSR) 1962, no. 1, p. 122-125; Pediatriya (USSR) 1962 [v. 41]no. 2, p. 94-95.

DESCRIPTORS: *Conferences, *Medicine, Tuberculosis, Surgery, Anesthesia, Pediatrics.

Contents:
The Session of the General Meeting of Academy of Medical Sciences USSR (no. 16) (concluded)
The Session of the General Meeting of Academy of Medical Sciences USSR (no. 16)
Scientific Conference of the Tuberculosis Specialists of Georgia, Tiflis, 17-20 Apr 61, by L. S. Kartoziya
On the results of the All-Union Conference of Surgeons, Traumatologists, and Anesthesiologists, by G. Zaitsev and V. Golovanov
The Congress of Pediatricians of the Ukrainian SSR (no. 3) L'vov, 24-27 Oct 61.

Gorbunov, V. I.
BETATRON EQUIPMENT FOR MEDICAL PURPOSES.
29 May 62 [10]p. JPRS: 13919.
Order from OTS or SLA $1.10 62-24992

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962, v. 16, no. 3, p. 55-57.

DESCRIPTORS: *Betatrons, Accelerators, *Medical equipment.

Sikorskii, A. and Kirstyan, Kali.
ACHIEVEMENTS OF VETERINARY MEDICINE IN THE ERADICATION OF ANTHRAX [AND] A HEAD PIECE FOR RECORDING ELECTROENCEPHALOGRAMS OF SERIOUSLY ILL PATIENTS. 28 May 62 [7]p. JPRS: 13895.
Order from OTS or SLA $1.10 62-24985

Trans. of Sel'skoe Khozyaistvo Sibiri (USSR) 1961, v. 6, no. 10, p. 42-43 and 53-54.

DESCRIPTORS: *Veterinary medicine, *Anthrax, Control, *Medical equipment, Electrodes, *Electroencephalography.

Zosin, C., Manescu, N. and others.
ARTIFICIAL KIDNEY MODEL DESIGNED AT THE TIMISOARA INSTITUTE OF MEDICINE (Un Model de Rinichi Artificial Realizat in Clinica a III-a Medicala a I. M. Timisoara). 31 July 61 [11]p. JPRS: 9823.
Order from OTS or SLA $1.60 62-19575

Trans. of Medicina Interna (Rumania) 1961, v. 13, no. 2, p. 297-302.

DESCRIPTORS: *Artifical kidney, Electrodialysis, Medical equipment, Design.

The collective of Medical Clinic III in Timisoara produced an experimental hemodialyzer. The hemodialyzer utilizes a continuous circuit and operates through both dialysis and ultra-filtration. This dialyzer uses flat cellophane sheets as dialyzing membranes. The apparatus is simple, relatively easy to handle, and can be produced with local means. In its current experimental form, it has a relatively low purification capacity (40 to 45 milliliters per minute) in comparison with large apparatuses. The purification capacity can be increased by increasing the dialysis surface area. (Author)

Microbiology

CYTOLOGY, 1961, VOL. 3, NO. 6. 7 May 62[154]p. 396 refs. JPRS: 13677.
Order from OTS or SLA $11.50 62-24736

Trans. of Tsitologiya (USSR) 1961, v. 3, no. 6, p. 629-728.

DESCRIPTORS: *Histology, *Microbiology, Succinic acids, *Dehydrogenases, Epithelium, *Tissues (Biology), Culture media, *Cornea, *Myxobacteriales, Spores, *Cardiac muscle, Transplantation, Enzymes, *Oxidases, Lymph, *Cytochemistry, *Phosphatases, Sympathetic nervous system, Hardening, *Plants, Iodine, *Lipids, Radioprotective drugs, *Mitosis.

Contents:
Nicolsii Grigoryevich Chlopin and his scientific legacy, by A. G. Knorre
Succinic dehydrogenase activity of endothelium normally and in tissue cultures, by N. G. Khlopin and M. G. Shcherbakova
Cultivation of cell clones of mammals and man, by N. B. Varshaver
The structure of myxobolus spores, by E. M. Kheysin and others
A study of cell divisions of the corneal epithelium by means of incubation of the eyes in vitro, by I. A. Utkin and others
The correlation between thermostability and differentiation level of heart muscle explants, by P. P. Rumyantsev
Cytochemical study of the activity of succinic oxidase system enzymes in the explants of human lymph nodes, by N. M. Chistova
Cytochemistry of alkaline phosphatase of sympathetic neurons, by A. G. Greten
Heat hardening of plant cells in nature, by V. Ya. Aleksandrov and A. Yazkulyev
The lack of a definite correlation between the iodine number of protoplasmic lipids and the cell thermo stability, by B. P. Ushakov and M. A. Glushankova

On radiochemical protection of tissue cultures, by A. D. Smirnov
Conference on the problem of mitosis, Leningrad, 1-3 June 61
Table of contents, 1961, v. 3.

Alekseevenko, N. D.
DEVICE FOR OVOSCOPY OF CHICK EMBRYOS IN FIELD CONDITIONS. [1961] 2p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-13941

Trans. of #Vopr[osy] Virusol[ogii] (USSR) 1960, v. 5, no. 5, p. 627-628.

DESCRIPTORS: *Viruses, Growth, Chickens, *Laboratory equipment.

Brandes, Sabina.
RESEARCH ON THE TOXIC FACTOR OF STRAINS OF THE AD-01 GROUP (Badania Czynnika Toksycznego Szczepow Groupy AD-01). 30 Aug 61 [13]p. JPRS: 9993.
Order from OTS or SLA $1.60 62-19572

Trans. of Medycyna Doswiadczalna i Mikrobiologia (Poland) 1961, v. 13, no. 2, p. 127-133.

DESCRIPTORS: Microbiology, *Shigella, *Shigella vaccines, *Toxicity, *Antigens, Antibodies.

An antigen analysis of filtrates of fresh and aged cultures of three strains of the Alkalescens-Dispar (AD) group of Shigella was done to clarify the pathogenesis of these organisms. The cultures were grown on broth media containing peptone proteose, incubated at 37° for 19 days. Samples taken from these cultures after 4 hrs, 24 hrs, 7 days and 19 days were filtrated and condensed 6-fold. Serum from rabbits immunized with the D5 strain was used for the serological reactions. The Ola and lb and Kla and lb were present in 2 of the strains. The third strain did not contain the K antigen. The presence of Olb antigen component was not demonstrated in any of the filtrates by their hemagglutination and precipitation reactions. The Ola component was revealed in these reactions in all the samples. The amount of the antigen increased with the age of the culture. Filtrates of strains not containing antigen K and those in which it was destroyed by heat, did not differ in their toxicity to mice from filtrates containing the K antigen. The antigenic analysis of the polysaccharide fraction suggest that these filtrates contain the Olb antigen components. The toxic factor of the filtrates was shown by the neutralization of the homologic serum. The antigen component responsible for the toxicity was not clarified by the agglutination and precipitation reactions. This toxicity may not be connected with the factors responsible for agglutination and precipitation reactions.

Giovannozzi-Sermanni, Giovanni.
A NEW SPECIES OF CORYNEBACTERIUM CAUSING THE DEGRADATION OF NICOTINE. [1962] 20p.
Order from K-H $25.00 K-H 11558-a

Trans. of il Tabacco (Italy) 1957, v. 61, no. 682, p. 26-48.
DESCRIPTORS: *Bacteria, *Nicotine, Deterioration.

Imshenetskii, A. A.
CURRENT TASKS OF GENERAL MICROBIOLOGY. 2 Feb 62, 12p. JPRS: 12256.
Order from OTS $0.50 62-11133

Trans. of Akademiya Nauk SSSR. Vestnik, 1961, v. 31, no. 10, p. 43-52.

DESCRIPTORS: *Microbiology, *Ecology, Soils, Bacteria, Fungi, Transformation, Microorganisms.

Kondrat'eva, N. V.
PRINCIPAL ACHIEVEMENTS AND PROBLEMS IN THE FIELD OF INVESTIGATION OF SOIL ALGAE (Golovni Dosyahnegnya i Zavdannya v Galuzi Vivchennya Gruntovykh Vodorostei). May 62 [32]p. 40 refs. RTS 2032.
Order from OTS or SLA $3.60 62-25459

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1961, v. 18, no. 2, p. 3-16.

DESCRIPTORS: *Algae, *Soils, Growth, Culture media Physiology, Ecology, Morphology, Nitrogen, *Microbiology.

Meisel, Henryk.
TYPE E BOTULISM POISONING (Zatrucia Botulinowe Typu E)Zatrucia Rybne)). 19 June 61 [15]p. JPRS:9425.
Order from OTS or SLA $1.60 62-19310

Trans. of Przeglad Epidemiologiczny (Poland) 1961, v. 15, no. 1, p. 77-85.

DESCRIPTORS: *Botulism, *Antigens, *Poisoning, *Fish, Identification, Etiology.

Slavnina, G. P.
INVESTIGATION OF UNDERGROUND BACTERIAL OXIDATION OF HYDROCARBONS. [1962] 6p.
Order from ATS $8.65 ATS-80P60R

Trans. of #Mikrobiologiya (USSR) 1961, v. 30, no. 6, p. 985-989.

DESCRIPTORS: *Hydrocarbons, *Oxidation, Bacteria, *Microbiology, Microorganisms.

Neurology and Psychiatry

Aslanov, A. S.
PROBLEMS CONNECTED WITH JOINT ACTIVITY OF THE FIRST AND SECOND SIGNAL SYSTEMS IN NORMAL AND PATHOLOGICAL STATES. [1961] [11]p.
Order from OTS or SLA $1.60 62-13776

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1958, v. 8, no. 1, p. 192-202.

DESCRIPTORS: *Nevropsychiatry, *Psychotherapy, *Conditioned reflex, *Pathology, Physiology, Scientific reports.

Papers are reviewed that were presented at a conference held on 7 to 10 October 1957 in the Institute of Higher Nervous Activity of the Academy of Sciences of the USSR. The conference was held in commemoration of the 108th anniversary of Pavlov's birth.

Kogan, A.
ORIGINAL SCHOOL OF THOUGHT IN THE STUDY OF THE BRAIN. 1 June 62 [6]p. JPRS: 13963.
Order from OTS or SLA $1.10 62-25007

Trans. from Meditsinskii Rabotnik (USSR) 1962 [v. 25] no. 29(2089) p. 4.

DESCRIPTORS: *Neurology, Brain, Theory.

A review is presented of the book by B. N. Klosovskiy and Ye. N. Kosmarskaya entitled Deyatel'noye i Tormoznoye Sostoyaniye Mozga (Active and Inhibiting State of the Brain). (See also 59-11119, 59-11390)

Stamishevskaya, N. N.
PRELIMINARY DATA ON THE TREATMENT OF SCHIZOPHRENICS DURING TREATMENT WITH METHIONINE AND SLEEP. [1962] 7p.
Order from OTS or SLA $1.10 62-14695

Trans. of mono. [Voprosy Eksperimental'noi Patologii] (Problems of Experimental Pathology) ed. by S. N. Braines, Moscow, 1959, chap. 25, p. 272-280.

DESCRIPTORS: *Psychoses, Therapy, Diseases, Liver, *Glucose, *Sleep, *Methionine.

Case histories.

Pathology

BULLETIN OF THE ACADEMIC MEDICAL COUNCIL OF THE MINISTRY OF HEALTH RSFSR, 1961, NO. 3: [SELECTED] TRANSLATIONS. 2 Apr 62 [153]p. JPRS: 13287.
Order from OTS or SLA $11.50 62-23799

Trans. of Byulleten' Uchenogo Meditsinskogo Soveta (USSR) 1961 [v. 2] no. 3, p. 3-6, 10-16, 20-48.

DESCRIPTORS: Scientific research, *Public health, *Rural areas, *Preventive medicine, *Therapy, Blood coagulation, Inhibition. *Circulatory system, Diseases, Heart, *Respiratory system, Infections, Age, Toxicity, *Industrial medicine, *Organic compounds, Synthesis, *Tuberculosis, Conferences, Sanitary engineering, *Air, *Contamination.

Contents:
The current state and tasks of scientific research in the field of rural hygiene in the public health institutions of RSFSR, by V. I. Prostyakova
Significance of therapeutic-prophylactic application of anticoagulants in combatting mortality due to cardiovascular diseases, by B. P. Kushelevskii
On the problems of scientific research in the field of prophylaxis of bronchopulmonary infections and senile respiratory insufficiency, by N. A. Troitskii
Sanitary-toxicologic characteristics of effluents from industries of organic synthesis, by V. A. Pokrovskii
From the experience of the activities of the commission on tuberculosis of the Academic Medical Council of the Ministry of Health RSFSR, by D. D. Aseev
Conference on the use of anticoagulants, by A. B. Vinogradskii
At the Collegium of the Ministry of Health RSFSR
At the Presidium of the Academic Medical Council of the Ministry of Health RSFSR
Sanitary protection of atmospheric air from pollution, by N. M. Tomson: review of mono. Sanitarnaya Okhrana Atmosfernogo Vozdukha ot Zagryazneniya, Moscow, 1959, by K. Beryushev
Current events.

BULLETIN OF THE SCIENTIFIC MEDICAL COUNCIL, 1961, NO. 4: [SELECTED ARTICLES]. 26 Feb 62 [56]p. 1 ref. JPRS: 12743.
Order from OTS or SLA $5.60 62-23338

Trans. of Byulleten' Uchenogo Meditsinskogo Soveta (USSR) 1961 [v. 2] no. 4, p. 3-22 and 27-44.

DESCRIPTORS: Conferences, *Diagnosis, *Therapy, *Diseases, *Public health, Standards, Countermeasures, Infections, *Industrial medicine, Pathology, Drugs, Pharmacology, Blood coagulation.

Contents:
Development and implementation of new methods of diagnosis, treatment and prophylaxis in institutions of the RSFSR Ministry of Public Health, by D. A. Zhdanov
Results of the setting of hygienic standards in RSFSR public health institutions in 1959-60 and the state of implementation, by A. P. Shitskova
Scientific-organizational problems of the verification of the effectiveness and approval of new methods of prophylaxis of infectious diseases, by L. N. Khristov
Eleventh scientific session of the Sverdlovsk Institute of Labor Hygiene and Occupational Disease Pathology by V. A. Mikhailov
Plenary session of the RSFSR MPH scientific medical council
At the presidium of the RSFSR MPH scientific medical council
Pharmacal therapy during disturbances of the blood coagulating system; symposium under the editorship of Prof. I. E. Akopov, Krasnodar, 1960.

HERALD OF OPHTHALMOLOGY, 1961, VOL. 74, NO. 6: [SELECTED ARTICLES]. 17 Apr 62 [33]p. 38 refs. JPRS: 13499.
Order from OTS or SLA $3.60 62-24023

Trans. of Vestnik Oftal'mologii (USSR) 1961, v. 74, no. 6. p. 32-36 and 41-53.

DESCRIPTORS: *Ophthalomology, *Cornea, *Burns, *Radiation injuries, *Surgery, Riboflavin, Ascorbic acid, *Eye.

Contents:
Passow's operation and its modification (sector conjunctivotomy) in chemical and thermal burns of the eye, by B. L. Polyak
Effect of radiant energy on the refracting media of the eye and problems of their protection, by G. G. Kanbai
Riboflavin and ascorbic acid content of the cornea following eye burns, by L. I. Blinova and others.

HETEROTRANSPLANTATION OF MALIGNANT TUMORS: CONCLUSIONS. 12 Feb 62 [8]p. JPRS: 12508.
Order from OTS or SLA $1.10 62-19153

Trans. of mono. Geterotransplantatsiya Zlokachestvennykh Opukholei, Moscow, 1961, p. 165-173.

DESCRIPTORS: *Transplantation, *Tumors, Sarcoma, *Brain, Mice, Growth, Inhibition, X-rays, Adrenal cortical extract.

Heterotransplants of Raus chicken sarcoma became engrafted in 47.4% of the cases in the primary inoculation and in 49% of the cases on the average in the ensuing generations, and the implants of these generations retained the morphologic structure, the species specificity and the biological properties of the original tumor. The Raus virus, upon intra-brain heterotransplantation of the chicken sarcoma, did not spread through the internal organs of the experimental animals. Implantation of human tumors in the brain and front chamber of the eye of animals was successful only in isolated cases. In their morphological structure, the human tumors which developed in the brains of the animals were always identical with the original neoplasma. Only an insignificant defense reaction was noted on the part of the brain tissue. The percentage of transplantability of the human neoplasms to animals which had received cortisone was 75-85% with the primary inoculation. In the succeeding generations the transplantability fluctuated between 25 and 85%. The implanted human tumors always retained the structure of the original neoplasms and in some cases were characterized by infiltrative growth. The cellular reaction around the heterotransplants was characterized by intensive lymphocytic infiltration, which was replaced two to three days after implantation by a proliferation of histocytes and fibroblasts. Five to six days after transplantation a second wave of lymphocytic infiltration was observed. Cortisone considerably inhibited these reactions. (Author)

MILITARY-MEDICAL JOURNAL, 1961, NO. 10.
8 Feb 62 [160]p. JPRS: 12423.
Order from OTS or SLA $11.50 62-19792

Trans. of Voenno-Meditsinskii Zhurnal (USSR) 1961, no. 10, p. 3-96.

DESCRIPTORS: *Military medicine, Communism, *Public health, Therapy, *Burns, Battle injuries, Skin, Transplantation, Anesthesia, Wounds, Proteases, *Bullet wounds, Liver, Kidneys, Nephritis, Pathology, Hemagglutinins, *Botulism, Antigens, *Inhalation immunization, Intestinal bacteria, *Arteriosclerosis, Pilots, Fatigue (Physiology), Medical personnel, Training, Submarines, Military hospitals, Doctors, Diagnosis, *Tuberculosis, Sanitation.
Contents:
Triumph of the immortal ideas of the October Revolution
The CPSU program and public health problems, by D. M. Grinishin
The Military Medical Order of Lenin Academy imeni S. M. Kirov before the twenty-second congress of the CPSU, by G. P. Seryakov and others
Pre-congressional duties have been accomplished, by N. M. Nevskii
They are working like communists, by V. P. Zubrilov
Organizational and clinical principles of rendering medical aid and treatment to the burned under conditions of modern warfare, by A. S. Georgievski and others
Fundamentals of military field therapy in the division and regiment areas, by M. T. Budagovskii
Some problems of organization of medical aid under current conditions, by M. A. Sarkisov
Skin grafting for burns, by A. A. Vishnevskii and others
Principles and prospects of treating severe burn sickness, by N. S. Molchanov
The role of the internist in the treatment of the burned, by L. M. Klyachkin
Anesthesia in redressing the severely burned, by M. Ya Matusevich and others
The use of protein hydrolysates in burn sickness, by L. N. Pushkar' and L. I. Gerasimova
The clinical aspects of gunshot wounds of the liver, by G. P. Shul'tsev
Diagnosis and treatment of isolated subcutaneous injuries to the kidneys, by B. S. Gekhman and M. L. Korikov
The place of focal nephritis in renal pathology, by B. V. Konyaev
The use of the indirect hemagglutination test for detecting botulinus toxin, by V. A. Sinitsyn
Preliminary results of aerogenic immunization against intestinal infections, by S. V. Krakht
The development of atheriosclerosis in jet aircraft pilots, by O. Koldovskii and others
Some problems in the study of flight work, by N. A. Agadzhanyan
Special training of physicians and chemist-aid-men-instructors on submarines, by V. V. Sosin
Experience in the organization of therapeutic practice of troop physicians in a garrison hospital, by A. P. Gololobov and G. R. Shlaifer
Experience in therapeutic practice of a troop physician at a city first aid station, by I. A. Nebukin
Setting up three tents (USB and UST) in a "T", by N. V. Belyaev and A. Khusnitdinov
Experience in detecting tuberculosis patients in a large unit, by Z. A. Bastadzhan
"Textbook of general and military hygiene", ed. by P. E. Kalmykov: book review by A. A. Minkh
On the sixtieth birthday of professor A. A. Bocharov
Scientific conference of the VMOLA imeni S. M. Kirova on the burn problem (no. 2), by V. O. Verkholetov
In the neurosurgical subsection of the UMB of the chief of the VMU MO, by B. A. Samotokin

PUBLIC HEALTH OF BELORUSSIA, 1961, NO. 9: [SELECTED ARTICLES]. 4 Apr 62 [22]p. JPRS: 13341.
Order from OTS or SLA $2.60 62-23818

Trans. of Zdravookhranenie Belorussii (USSR) 1961 [v. 7] no. 9, p. 3-11 and 76-77.

DESCRIPTORS: *Public health, Conferences, *Parturition, *Gynecology.

Contents:
Public health of Belorussiya at the Party Congress (no. 22) by I. A. Insarov
The great care of man, by I. S. Beresten'
Conference of obstertricians-gynecologists, Minsk, 20-22 June 1961.

PUBLIC HEALTH STATISTICS ON YUGOSLAVIA (1960-61) [TABLES]. 8 Mar 62 [21]p. JPRS: 12866. Original copy poor quality; available on loan from OTS or SLA 62-23457

Trans. of Narodno Zdravlje (Yugoslavia) 1961, v. 17, no. 6, p. 213 and no. 7/8, p. 273-280.

DESCRIPTORS: *Public health, *Vital statistics, *Infections, Diseases, *Hospitals, *Yugoslavia.

Contents:
Morbidity of acute infectious diseases in Yugoslavia, Mar-Apr 61
Work of health institutions in 1960 (preliminary data)
Occurences of acute infective diseases in Yugoslavia.

QUESTIONS OF TOXOPLASMOSIS. 6 Mar 62 [60]p. JPRS: 12894.
Order from OTS or SLA $5.60 62-23397

Trans. of mono. (pamphlet) Voprosy Toksoplazmoza (report theses of a conference on toxoplasmosis held in Moscow, 3-5 Apr 61) Moscow, 1961, 69p.

DESCRIPTORS: *Toxoplasmosis, Etiology, Epidemiology, *Diagnosis, Therapy, Disease carriers, Complement, Skin, Pathology, Nervous system, Heart, Congenital anomalies, Pregnancy, Diseases, Eye, Children, Mental deficiency, Strabismus.

Contents:
Foreword, by D. N. Zasukhin
Materials on the distribution of toxoplasmosis in western Turkmenistan, by G. M. Gershkovich
Materials on the study of intracutaneous tests for toxoplasmosis, by G. I. Gracheva
Certain results in studying the natural foci of toxoplasmosis, by Z. V. Dunayeva and D. N. Zasukhin
Deformities of newborn animals on the background of toxoplasmosis, by I. F. Yegorov
The C. F. T. and I. C. T. in diagnosing toxoplasmosis, by I. F. Yegorov, et al
On the question of C. F. T. specificity in diagnosing toxoplasmosis, by A. P. Yegorova and A. K. Shustrov
Particular features in the multiplication of toxoplasma in the central nervous system and the formation of pseudocysts, by Yu. M. Zhabotinskiy et al
Materials on the study of toxoplasmosis in birds, by A. K. Iygiste
Materials on the epidemiology of toxoplasmosis, by Ye. P. Kovaleva and G. P. Slavin
Materials on the study of toxoplasmosis in the dogs of Moscow, by M. F. Kovalevskiy et al
A study of the spread of toxoplasmosis among animals and the people in contact with them, by L. V Chernevskaya
Serological research of domestic animals for toxoplasmosis, by Ye. A. Shevkunova et al
On the susceptibility of certain species of wild animals to toxoplasmosis, by Ye. A. Shevkunova and D. N. Zasukhin
Congenital toxoplasmosis as one of the reasons for defects in the pre-natal development of children, by N. A. Balakina
Toxoplasmosis in obstetrics, by V. I. Bakhutashvili
The results of the intracutaneous allergic test for certain eye diseases, by N. Beradze et al
Materials on a differentiated diagnosis of toxoplasmosis, by L. M. Bolkhovitinova
Certain data on toxoplasmosis in man, by T. I. Buzhiyevskaya
Toxoplasmosis in patients with congenital heart defects, by R. M. Gofman
The effectiveness of treating pregnant women with acquired toxoplasmosis, by G. I. Golovatskaya
Materials on the laboratory diagnosis of toxoplasmosis, by G. M. Gladush
On the question of the laboratory diagnosis of toxoplasmosis, by Ye. P. Dudyak and G. V. Larionova
The hidden form of acquired toxoplasmosis by F. D. Zagubin
Human toxoplasmosis in armenia, by Z. S. Isaakyan
The study of toxoplasmosis as an etiological factor of oligophrenia in children, by V. V. Kvirikadze and I. A. Yurkova
On the question of the clinical symptoms of acquired toxoplasmosis, by L. K. Korovitskiy
Toxoplasmosis in pregnant women, by G. K. Kusainova, Z. R. Syrgabayeva
Preliminary laboratory data on toxoplasmosis in the Latvian SSR, by Z. Ya. Leymane
The significance of disturbances in the C. N. S. in diagnosing toxoplasmosis, by G. D. Leshchenko and E. P. Miroshnik
The results of research for toxoplasmosis on women with a pathologic pregnancy by the intracutaneous test, by O. V. Mgaloblishvili and M. V. Kuchukashvili
Congenital toxoplasmosis in the city of Omsk, by G. I. Netskiy et al
On the question of toxoplasmosis prophylaxis under the conditions of a woman's consultation office, by L. F. Novitskaya
Materials on the diagnosis of toxoplasmosis in children, by A. D. Reshetnikova et al
Serological testing for toxoplasmosis in mentally retarded children and in children with anomalies of development, by Z. R. Syrgabayeva and K. Ormantayev
Clinical features for the light forms of congenital toxoplasmosis, by V. A. Tabolin
The results of testing children with afflictions of the central nervous system for toxoplasmosis, by Ye. S. Tubanova
The results of testing nursery-age children and their mothers for toxoplasmosis, by A. L. Filippova-Nutrikhina et al
The C. F. T. with the toxoplasmosis antigen in cases of anomalies of development of the fetus and with certain types of obstetric pathology by V. M. Chtetsova et al
Congenital toxoplasmosis as one of the reasons for complicated strabismus, by I. Chibirene
Afflictions of the organs of vision with congenital and acquired toxoplasmosis according to the data of the Filatov Institute, by N. I. Shpak
Neuro-psychological changes under toxoplasmosis, by N. F. Shilo

Laine, Ole.
NERVES OF IRON. 6 Mar 62 [5]p. FTD-TT-62-203.
Order from OTS or SLA $1.10 62-24946

Unedited rough draft trans. from Kommunist [Moscow] (USSR) 1962 [v. 39] 5 Jan.

DESCRIPTORS: *Nerves, *Plastic surgery, *Prosthetics.

Surgeon Boris Ognev removed the sciatic nerve from a dog and in its place inserted a metal arciform electrode. At first the animal felt somewhat uncertain with this "aquisition." There apparently was some discomfort because the biocurrents in the operated leg passed through the electrode and not through the usual nerve fibers. But after a while the animal started to move freely, get up, and sit down. An entire series of such experiments were carried out with dogs, rabbits and chimpanzees. Control experiments were set up at the same time. In certain animals the removed sections of the nerve were not replaced by prostheses. In these cases the paw weakened, was subjected to edema, and slow necrosis set it. The laboratory now has a dog whose vagus nerve was transectioned from two sides in the neck. Impulses pass over this nerve to regions of the heart, lungs, stomach and to other vitally important organs. Nine months have passed since the prosthesis was inserted and so far no deviations have been detected in the dog's activity. The dog eats and sleeps normally, is lively and cheerful. (Extracted)

Astapenko, M. G.
ALL-UNION RHEUMATOLOGIC CONFERENCE [(NO. 1) MOSCOW, 23-27 JAN 61]. [10]p. JPRS: 14118.
Order from OTS or SLA $1.10 62-25166

Trans. of Terapevticheskii Arkhiv (USSR) 1961, v. 33, no. 4, p. 112-116.

DESCRIPTORS: Conferences, *Rheumatic fever, Diagnosis, Therapy, Control.

Atakhanov, E. I. and Medvedev, N.
ORGANIZATION OF SCIENTIFIC RESEARCH IN MEDICINE [AND] SCIENTIFIC CONTACTS WITH FOREIGN SCIENTISTS. 23 Mar 62 [12]p. JPRS: 13129
Order from OTS or SLA $1.60 62-23595

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1961, v. 16, no. 12, p. 87-91.

DESCRIPTORS: *Scientific organizations, *Medicine, Scientific research, *Scientific personnel.

Avdeev, G. I.
THE ROLE OF VIRUSES IN THE ORIGIN OF MALIGNANT TUMORS. 21 May 62 [11]p. JPRS: 13800.
Order from OTS or SLA $1.60 62-24706

Trans. of mono. Uchenie Orake (Theories of Cancer) Moscow, 1961, p. 18-27.

DESCRIPTORS: *Viruses, Tumors, *Cancer, *Etiology, Theory.

Belousova, I. M. and Verbenko, A. A.
SPLENECTOMY FOR KOROVNIKOV'S DISEASE IN AN EXPECTANT MOTHER. [1962] [8]p. 9 refs.
Order from OTS or SLA $1.10 62-23571

Trans. of Khirurgiya (USSR) 1960, v. 36 [no. 2] p. 90-94.

DESCRIPTORS: *Spleen, *Surgery, *Parturition, Pathology, Hemorrhage, Anemia.

Bulatova, T. I., Sitnikova, N. N., and Sergeeva, T. I.
PROPHYLAXIS AND TREATMENT OF BOTULISM. 13 Apr 62 [8]p. JPRS: 13457.
Order from OTS or SLA $1.10 62-24002

Trans. of Meditsinskaya Sestra (USSR) 1961, v. 20, no. 6, p. 23-26.

DESCRIPTORS: *Botulism, Countermeasures, Therapy, *Food, Processing, Contamination, Control.

Chernyshev, V. F.
THE ALL-UNION AND ALL-RUSSIAN CONFERENCES FOR THE CONTROL OF TUBERCULOSIS: SUMMARY REPORTS. 22 May 62 [7]p. JPRS: 13841.
Order from OTS or SLA $1.10 62-25012

Trans. of Fel'dsher i Akusherka (USSR) 1961, no. 10, p. 3-6.

DESCRIPTORS: Conferences, *Tuberculosis, Reports, *Public health, Control.

Fen'or, S. M.
EXPERIENCES FROM THE WORK OF THE CLINIC FOR TREATMENT OF FEMALE STERILITY (Opyt Raboty Kabineta po Lecheniyu Zhenskogo Besplodiya). 1960, 8p. RSTP Ab-3342-B60.
Order from OTS or SLA $1.10 62-15067

Trans. of Zdravookhranenie Turkmenistana (USSR) 1957, v. 1, no. 3, p. 41-44.

DESCRIPTORS: *Women, *Reproductive systems, Inhibition, Therapy, *Diseases, Metabolism, Endocrine glands, Hormones.

An eight-months' period of the work of the clinic for treatment of female sterility at the First Ashkhabad City Hospital is reported.

Freudenberg, K.
THE APPARENT INCREASE OF CANCER MORTALITY. [1962] 17p.
Order from K-H $21.25 K-H 5513-b

Trans. of Archiv für Hygiene und Bakteriologie (West Germany) 1952, v. 136, p. 129-138.

DESCRIPTORS: *Cancer, *Vital statistics.

Gastaut, H., Regis, H. and others.
ABOUT SEIZURES HAPPENING DURING TELEVISION SHOWS AND THEIR MECHANISMS (A Propos des Crises Survenant au Cours des Spectacles Télevisés et Leur Mécanisme). [1962] 8p.
Order from SLA $1.10 62-14528

Trans. of [la] Presse Médicale (France) 1961, v. 69 [no. 35] p. 1581-1583.

DESCRIPTORS: *Convulsions, *Television, *Epilepsy, Etiology, *Photosensitivity.

An electroencephalographic and clinical study was made of thirty-five patients having had one or more epileptic seizures in front of a TV screen. The average age of these patients was 19.2 years (53% are from 0 to 10 years old, 18% 11 to 20 years, 23% 21 to 30 years and 6% 31 to 40 years). Nine of these patients have had less than four seizures, always in front of the TV screen, six have had 2 to 5 seizures of which 1 or 2 were in front of the TV screen, 3 have had more than 5 seizures of which 1 was in front of the TV screen. Seventeen finally are proven epileptics with more or less frequent seizures who have had only one or two seizures during TV shows. Results indicate that TV is able to produce epileptic seizures in particularly photosensitive patients, in a permanent way, or in a temporary fashion under the adjuvant influence of different factors.

Gritsyute, L. A. and Mironova, A. I.
ON THE CANCEROGENIC ACTIVITY OF TOBACCO TARS. [1962].
Order from K-H $18.75 K-H 10880-a

Trans. of #Vopr[osy] Onkol[ogii] (USSR) 1960, v. 6, no. 8, p. 25-33.

DESCRIPTORS: *Tobacco, Etiology, *Cancer.

Grupper, Ch., Bregeat, P. and Juge, P.
A CASE OF "NIVAQUINO"-TABAGIC[SIC] RETINOPATHY IN A PATIENT AFFECTED WITH SUBACUTE LUPUS ERYTHEMATOSUS. [1962].
Order from K-H $10.00 K-H 10809-c

Trans. of [Société Française de Dermatologie et de Syphiligraphie. Bulletin] 1960 [v. 67] no. 2 [p. 234-238].

DESCRIPTORS: *Tobacco, *Tuberculosis, *Skin, *Retina, Diseases.

Guerin, Maurice and Cuzin, Jean.
CUTANEOUS TESTS IN THE MOUSE FOR DETERMINING THE CARCINOGENIC ACTIVITY OF CIGARETTE SMOKE TARS. [1962] 13p.
Order from K-H $16.25 K-H 11279-g

Trans. of Association Française pour l'Étude du Cancer. Bull[etin] 1961, v. 48, p. 112-121.

DESCRIPTORS: *Skin, *Cancer, Etiology, *Cigarettes, *Tobacco, *Smokes.

Guillerm, R., Badre, R., and Vignon, B.
INHIBITORY EFFECTS OF TOBACCO SMOKE ON THE CILIARY ACTIVITY OF THE RESPIRATORY EPITHELIUM AND NATURE OF THE RESPONSIBLE COMPONENTS. [1962] 15p.
Order from K-H $18.75 K-H 11433-a

Trans. of Acad[émie] Nat[ionale] de Méd[ecine, Paris]. Bull[etin] (France) 1961, ser. 3, v. 145, no. 20/21, p. 416-423.

DESCRIPTORS: *Tobacco, *Smokes, *Epithelium, *Respiratory system, Inhibition.

Gul'kevich, Yu. B., Lazyuk, G. I., and Gul'kevich, K. Yu.
GENESIS OF BIRTH DEFECTS AND SPECIFICITY OF TERATOGENIC FACTORS (Kauzal'nyi Genez Urodstv i Spetsicichnost' Teratogennogo Vozdeistviya) 15 Mar 62 [28]p. 127 refs. NIH no. 3-31-62.
Order from OTS or SLA $2.60 62-23791

Trans. of Arkhiv Patologii (USSR) 1960, v. 22, no. 12, p. 3-19.
Another trans. is available from OTS $0.75 as 61-21499, JPRS-9038, 6 Apr 61, 29p.

DESCRIPTORS: *Congenital anomalies, *Etiology, *Bibliography, Heat, Radiation effects, Nutrition, Hormones, Infections, Age, Sex.

For abstract see Technical Translations 5: 590-591, 1961.

Hunziker, A. and Bühlmann, A.
THE INFLUENCE OF CIGARETTE SMOKING ON THE RESPIRATION RESISTANCES. Feb 61, 8p.
Order from K-H $10.00 K-H 10573-b

Trans. of Allergie und Asthma (East Germany) 1960, v. 6, no. 3, p. 145-149.

DESCRIPTORS: *Tobacco, *Cigarettes, Respiration, *Respiratory system.

Kalaci, S.
THE ROLE OF CIGARETTES IN ARTERIAL OBLITERANS: DISORDERS OF THE INFERIOR MEMBERS. Nov 60, 4p.
Order from K-H $5.00 K-H 10413

Trans. of Méd[ecine] et Hyg[iene] (Switzerland) 1960 [v. 18] 20 May, p. 355.

DESCRIPTORS: *Arteries, Diseases, *Cigarettes, *Tobacco.

Ledermann, Sully.
CANCERS, TOBACCO, WINE AND ALCOHOL COMBINING THEIR INFLUENCES, SHOULD THE CASE ARISE... [1962] 20p.
Order from K-H $25.00 K-H-4089-a

Trans. of Concours Médical (France) 1955, v. 77, no. 10, p. 1218-1222 and 1225.

DESCRIPTORS: *Cancer, *Tobacco, *Wines, *Alcohols.

Lickint, F.
CANCER DOES NOT COME FROM SMOKING. [1962] 28p.
Order from K-H $35.00 K-H 5223-b

Trans. of die Medizinische [Welt] (West Germany) 1956, 14 Jan, p. 85-91.

DESCRIPTORS: *Cancer, *Smokes, Tobacco, Nicotine.

Lickint, F.
CITY ATMOSPHERE, TOBACCO SMOKE AND LUNG CANCER INCREASE. [1962] 12p.
Order from K-H $15.00 K-H 5525-c

Trans. of Medizinische Klinik (West Germany) 1956, v. 51, p. 761-764.

DESCRIPTORS: *Lungs, *Cancer, Smokes, Tobacco, Atmosphere, Urban areas.

Lickint, F.
IS THERE A DISCREPANCY BETWEEN THE FREQUENCY OF PULMONARY CARCINOMA AND THE CONSUMPTION OF TOBACCO IN THE VARIOUS COUNTRIES. [1962] 9p.
Order from K-H $11.25 K-H 4006-c

Trans. of Münchener Med[izinische] Wochenschrift (West Germany) 1955, v. 97, no. 30, p. 948-949.

DESCRIPTORS: *Lungs, *Cancer, *Tobacco, Consumption.

Lickint, F.
SMOKING AND CANCER. [1962] 11p.
Order from K-H $13.75 K-H 5352-a

Trans. of Münch[ener] Med[izinische] Woch[enshrift] (West Germany) 1954, v. 96, p. 1366-1369.

DESCRIPTORS: *Smokes, Tobacco, *Cancer.

Lundstrøm, Erik.
SMOKE POISONING TREATED WITH HYPOTHERMIA [1962] 10p.
Order from K-H $12.50 K-H 6574-a

Trans. of Ugeskrift for Laeger (Denmark) 1957, v. 119, 11 Apr, p. 458-460.

DESCRIPTORS: *Smokes, Tobacco, *Poisoning, *Hypothermia.

Lupu, N. Gh., Popescu, and Enescu.
THE ACTION OF SMOKING ON THE CARDIOVASCULAR APPARATUS. [1962] 9p.
Order from K-H $11.25 K-H 11548-e

Trans. of Med[icina] Interna (Rumania) 1961, v. 13, p. 347-351.

DESCRIPTORS: *Circulatory system, *Smokes, *Tobacco, Heart.

Massman, W.
A METHOD FOR STUDYING PERMEATION OF TOXIC SUBSTANCES THROUGH THE SKIN. Oct 60, 11p.
Order from K-H $13.75 K-H 10325-c

Trans. of Archiv f[ür] Toxikologie (West Germany) 1956, v. 16, p. 208-214.

DESCRIPTORS: *Skin, Absorption, *Poisons.

Monnet, R. and Viala, A.
SOME REMARKS ON POISONING PRESUMED TO BE DUE TO TOBACCO. Dec 60, 6p.
Order from K-H $7.50 K-H 10401-e

Trans. of Annales de Medecine Legale (France) 1960, v. 40, no. 1, p. 40-43.

DESCRIPTORS: *Tobacco, *Poisoning.

Muschter, Walter.
TRAVELOGUES; AS PHYSICIAN IN KOREA (Reiseberichte: Als Arzt in Korea) tr. by Claudius F. Mayer. July 59, 23p. H 4360.
Order from OTS or SLA $2.60 60-21060

Trans. of das Deutsche Gesundheitswesen (East Germany) 1959, v. 14, no. 17, p. 778-788.

DESCRIPTORS: Medicine, *Diseases, *Germany, *Korea, Geography, Ecology, *Chinese traditional medicine.

Observations are presented that were obtained by Dr. Muschter during a 2 1/2 yr residence as physician for a group of East German workers that were assisting in the rebuilding of the North Korean cities of Ham Hung and Hung Nan. Several diseases that are common in Germany were infrequent or absent in Korea. Some of these are arteriosclerosis, hypertension, hernias, hemorrhoids, perniceous anemia, leukemia, and some forms of chronic rheumatism. The absence of rheumatic affections is attributed to the floor-heating in Korean homes. Descriptions are given of other diseases that were observed that are rare in Germany, and of a few that are endemic to particular sections of Korea. A Korean doctor reported that 12 patients died out of 34 cases (of encephalitis) that were treated with European medicine, while only 1 patient died out of 12 that were treated by traditional Korean methods (adaptations of traditional Chinese therapeutic practices). Considerable space is given to traditional Korean therapeutic methods, which "achieve thoroughly good results" according to older Korean physicians and even by those who studied in European medical schools. Dr. Muschter believes, however, that European medicine is becoming more popular and that there is a tendency for persons to visit the old-time physicians mainly for chronic ailments.

Napolitano, A.
PHYSIOLOGICAL AND PATHOLOGICAL EFFECTS OF SMOKING. [1962] 6p.
Order from K-H $7.50 K-H 11279-a

Trans. of il Progresso Medico (Italy) 1960, v. 16, no. 21, p. 734-736.

DESCRIPTORS: *Smokes, *Tobacco, Physiology, Pathology.

Oberling, Ch.
THE SERIOUS PROBLEM OF BRONCHIAL CANCER. [1962] 25p.
Order from K-H $31.25 K-H 3084-c

Trans. of la Presse Médicale (France) 1954, v. 62, no. 33, p. 712-715.

DESCRIPTORS: *Cancer, *Lungs.

Pineles, S.
PREVENTIVE TREATMENT OF BRONCHOPULMONARY CANCER. [1962] 12p.
Order from K-H $15.00 K-H 11538-a

Trans. of #Vopr[osy] Onkol[ogii] (USSR) 1961, v. 7, no. 7, p. 105-111.

DESCRIPTORS: *Lungs, *Cancer, Preventive medicine.

Polydorova, M.
QUANTITATIVE SAMPLING OF TOBACCO SMOKE ON MEMBRANE FILTERS AND THE ESTIMATE OF ITS RETENTION IN SMOKERS' LUNGS. [1962].
Order from K-H $11.25 K-H 10997-a

Trans. of Rozhl[edy v] Tuberk[ulose a v Nemocech Plicnich] (Czechoslovakia) 1959, v. 19, no. 8, p. 607-611.

DESCRIPTORS: *Tobacco, *Smokes, *Lungs, Membranes, Particulate filters.

Pommatau, E.
THE NICOTINE TEST IN POLYURO-POLYDIPSIC SYNDROMES. [1962]
Order from K-H $25.00 K-H 10764-d

Trans. of Pathologie et Biologie (France) 1958, v. 6, p. 966-972.

DESCRIPTORS: *Nicotine, *Urine, Excretion, *Thirst, *Diseases.

Schweizer, W., Planta, P. von and others.
EXPERIMENTS ON THE PHARMACOLOGICAL INFLUENCING OF THE ACTION OF NICOTINE ON THE BALLISTOCARDIOGRAM. Communication 2 on Tobacco and Circulation. Aug 60, 6p.
Order from K-H $7.50 K-H 10281-h

Trans. of Cardiologia (Switzerland) 1960, v. 36, p. 49-54.

DESCRIPTORS: *Nicotine, *Tobacco, Circulatory system, Pharmacology, Ballistocardiography, Heart.

Selivanova, L.N., Kossovskaya, I.I., and Shishakova, I. A.
TOXICITY AND DISTRIBUTION IN THE ORGANISM OF FINELY-DISPERSED METALLIC NICKEL [Toksichnost' i Raspredelenie v Organizme Melkodispersnogo Metallicheskogo Nikelya]. May 61 [14]p. (4 figs. 1 table omitted) 11 refs. NLL M3394.
Order from OTS or SLA $1.60 62-23881

Trans. of #Farmakologiya i Toksikologiya (USSR) 1960, v. 23, p. 549-557.

DESCRIPTORS: *Nickel, *Toxicity, Absorption, *Excretion, *Tissues (Biology), Lungs.

Metallic nickel powder with a particle size of 0.19 micron on repeated intravenous application exerts a strong toxic effect on rabbits, rats and white mice. The range between the minimum toxic and the absolute lethal doses for rats and mice is between 10 and 600 mg/kg. The absolute lethal dose for rabbits is 250 mg/kg. The toxic effect of metallic nickel introduced orally is less pronounced. The minimum and absolute lethal doses for rats and mice are 5 and 1200 mg/kg, respectively. Tropism of nickel towards the lung tissue has been observed. With intravenous introduction, the highest concentration of nickel is to be found in the lungs throughout the whole time of experiment, which may promote the development of pneumonia. With oral introduction, the distribution of the absorbed part of nickel is similar to the distribution of soluble nickel salts. During the first 3 days, the nickel accumulates in the kidneys, liver, lungs and spleen. On the 6th day of experiment, as a result of redistribution, the greatest amount of nickel is to be found in the lung tissues. The bulk of the absorbed nickel is eliminated within 7 days. The elimination of nickel with the faeces is greater than that with the urine. With intravenous application, this difference amounts to 400-600%. (Author)

Thomascheck, G.
TREATMENT OF PRE-ECLAMPSIA (Die Behandlung der Präeklampsie). [1962] [1]p. (1 fig. 31 refs. omitted).
Order from SLA $1.10 62-10735

Partial trans. (abstract only) of Internist (Germany) 1960, v. 1, no. 3, p. 122-127.

DESCRIPTORS: *Toxicity, *Pregnancy, Therapy, Inhibition, Diagnosis.

Toeppich, E., Krueger, W., and Toeppich-Straub, D.
CLINICAL ASPECTS OF BRUCELLOSIS IN MAN [pt. 1]. 29 Dec 61 [30]p. JPRS: 11729.
Order from OTS or SLA $2.60 62-19729

Trans. of Deutsche Gesundheitswesen (East Germany) 1961, v. 16, no. 44, p. 2079-2084.

DESCRIPTORS: *Brucellosis, Man, *Epidemiology, Liver, Inflammation, *Diagnosis, Tests, Agglutination.

An evaluation was made of 178 case histories from 43 East-German hospitals.

Pharmacology and Toxicology

PHARMACOLOGY AND TOXICOLOGY, 1961, VOL. 24, NO. 6: [SELECTED] ARTICLES. 11 Apr 62 [20]p. JPRS: 13416.
Order from OTS or SLA $1.60 62-23809

Trans. of #Farmakologiya i Toksikologiya (USSR) 1961, v. 24, no. 6, p. 754-761.

DESCRIPTORS: Conferences, *Pharmacology, Scientific organizations, Physiology, *Drugs, Biochemistry, *Pyrazolone derivatives, Therapy.

Contents:
All-Union Pharmacologie Conference (no. 9)
The Moscow Pharmacological Society and the sections of pharmacology of the Moscow Physiological Society, by Z. T. Samoylova
The sections of pharmacology and toxicology of the Leningrad Society of Physiologists, Biochemists, and Pharmacologists imeni by I. M. Sechenov
Conference on the problem of the medical use of pyramidine derivatives, by N. I. Nikolaeva.

PROBLEMS INVOLVED IN FIVE-YEAR PLAN FOR RESEARCH IN PHARMACOLOGY FOR 1956-60. [1962] 20p. NIH no. 4-10-62.
Order from OTS or SLA $1.60 62-23869

Trans. of Farmakologiya i Toksikologiya (USSR) 1956, v. 19, no. 4, p. 57-62.
Other translations are available from LC or SLA mi$2.70, ph$4.80 as 60-19496, 12 Apr 57, 21p. and mi$2.40, ph$3.30 as 60-19497 [1960] 15p.

DESCRIPTORS: *Medical research *Pharmacology, Therapy.

PROCESS OF PREPARING PRODUCTS DERIVED FROM PLANT EXTRACTS FOR CARE OF THE SKIN, tr. by F. H. B. 28 Feb 62, 4p.
Order from OTS or SLA $1.10 62-23727

Trans. of French patent 1,054,555, gr. 14, cl. 4, by Etablissements Helena Rubinstein, appl. 16 Apr 52, granted 7 Oct 53, pub. 11 Feb 54.

DESCRIPTORS: *Pollen, Manufacturing methods, Skin, *Ointments.

The present invention relates to utilization of flower pollen gathered by bees, for obtaining liposoluble substances capable of being absorbed by the epidermis. The pollen is extracted from the beehive before it has been definitely transformed into honey; "royal jelly" can also be utilized. The bee pollen is soaked for about 24 hours in ozonized oil; the product of this soaking is then treated with volatile solvents, such as petroleum ether, chloroform, etc. These solvents are then removed by distillation and the ozonized oil containing in solution the liposoluble substances of the pollen can then be mixed in a proportion of 1 to 10% with other substances, such as e.g. beeswax, flower wax, seed oil, etc. The cosmetic product of the invention may be prepared in the form of cream, milk, lotion, suntan oil, or in other forms, or mixed with other substances which are neutral or have a particular effect.

SOME RESULTS AND THE DIRECTION OF SCIENTIFIC RESEARCH IN THE FIELD OF PHARMACY. 6 June 62 [13]p. JPRS: 14031.
Order from OTS or SLA $1.60 62-25055

Trans. of Aptechnoe Delo (USSR) 1962, v. 11, no. 1, p. 3-11.

DESCRIPTORS: Scientific research, Conferences, *Drugs, *Pharmacology.

Aleksandrov, N. I., Gefen, N. E. and others. ON THE ORGANIZATION, METHOD AND TECHNIQUE OF MASS AEROSOL IMMUNIZATION OF PEOPLE WITH PULVERIZED VACCINES (Aerozol'naya Immunizatsiya Sukhimi Zhivymi Vaktsinami i Anatoksinami. Soobshchenie VII: Ob Organizatsii, Metodike i Tekhnike Massovoi Aerozol'noi Immunizatsii Lyudei Pylevymi Vaktsinami). Rept. no 7. of Aerosol Immunization with Dry Living Vaccines and Anatoxins. 9 Apr 62 [10]p. (Eng. summary omitted). Trans. V-1770.
Order from OTS or SLA $1.10 62-24754

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1961, v. 32, no. 9, p. 3-7.

DESCRIPTORS: *Inhalation immunization, Population, *Brucellosis vaccine, Immunization, *Anthrax vaccine, Dosage, Effectiveness.
It was established that aerosol immunization with pulverized vaccines can be carried out in ordinary rooms with a 5 to 160 m^3 capacity. In rooms of the indicated size it is possible to immunize simultaneously from 4 to 200 people respectively. In mass aerosol immunization the determination of the biological concentration of the aerosol and of the inhalation dose, experimentally, can be omitted. If the original biological activity of the pulverized vaccine, the size of the room in which the aerosol immunization is conducted, and the [time of] the exposure to immunization is known. (Author) (See also 62-13455)

Berndt, Gustav Adolf.
PROCESS OF MANUFACTURING A SKIN CREAM CONTAINING HORMONES DERIVED FROM BEE CULTURE PRODUCTS, tr. by F. H. B. 28 Feb 62, 6p.
Order from OTS or SLA $1.10 62-23725

Trans. of French patent 906,701, gr. 14, cl. 4, appl. 8 Aug 44, granted 28 May 45, pub. 17 Jan 46.

DESCRIPTORS: Manufacturing methods, Bees, *Hormones, *Ointments, Skin.

A mixture of nutritive bee juice or alimentary paste is mixed with the materials generally employed for cosmetic preparations. The bees are fed special alimentary solutions, whose efficient constituents are increased by adding suitable fats or oils rich in hormones and vitamins, e.g., cod liver oil. Products obtained from the bee honeycombs after 4 to 5 1/2 days from the laying of the egg, then dried, are used for the cosmetic preparations. Thereafter the liquid product must still be filtered to remove the larvae therefrom, and then this product must be purified. Wool fat, natural wax and spermaceti are emulsified in a suitable manner and the alimentary-juice honey rich in hormones produced by the process of the invention is added thereto, preferably at 45°, while stirring.

Bickel, G.
OBSERVATIONS ON THE CHOICE AND THE SECONDARY EFFECTS OF VARIOUS CORTISONE DERIVATIVE. [1962] 10p.
Order from ATS $16.45 ATS-07P60F

Trans. of Chemotherapia (Switzerland) 1960, v. 1, no. 2, p. 66-80.

DESCRIPTORS: *Adrenal cortical extract, *Drugs.

Culik, J. and Bejsovec, M.
THE GROWTH EFFECT OF SODIUM SALICYLATE AND SODIUM GENTISATE, II. [1962] 4p.
Order from ATS $6.35 ATS-09P61C

Trans. of Casopis Lekaru Ceskych (Czechoslovakia) 1961 [v. 100] no. 42, p. 1332-1335.

DESCRIPTORS: *Drugs, Growth, *Sodium salicylates, Pharmacology, Sodium compounds, Salicylates, *Carboxylic acids.

Dzhavadov, R. B., Murav'ev, I. A., and Aliev, R. K.
ALL-UNION SCIENTIFIC CONFERENCE OF PHARMACISTS, BAKU, 30 MAY-3 JUNE 61. 25 Apr 62 [14]p. JPRS: 13607.
Order from OTS or SLA $1.60 62-24256

Trans. of Azerbaidzhanskii Meditsinskii Zhurnal (USSR) 1961, no. 10, p. 78-83.

DESCRIPTORS: *Conferences, *Pharmacology, Drugs, Plants.

Fleuriot, M.
NOTE ON THE ROLE OF TOBACCO IN CARBON MONOXIDE POISONING. [1962] 14p.
Order from K-H $17.50 K-H 3318-a

Trans. of Arch[ives des] Mal[adies] Profess[ionnelles, de Medécine du Travail et de Securité Sociale] (France) 1954, v. 15, p. 229-233.

DESCRIPTORS: *Tobacco, *Carbon monoxide poisoning.

Herz, Albert.
THE EFFECT OF ANTICHOLINERGIC, NICOTINOLYTIC AND ANTIHISTAINIC AGENTS ON CENTRALLY SUPPRESSING AND EXCITING MORPHINE ACTION IN RATS. [1962] 27p.
Order from K-H $33.75 K-H 11279-d

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie und] Pharmak[ologie] (West Germany) 1961, v. 241, p. 236-253.

DESCRIPTORS: *Drugs, Inhibition, *Acetylcholines, *Nicotine, *Vasomotor drugs, Nervous system, Reaction (Psychology), *Morphine.

Kindlik, Tadeusz.
SULFONAMIDES WITH PROLONGED ACTIVITY. 16 Oct 61 [4]p. JPRS: 10580.
Order from OTS or SLA $1.10 62-19523

Partial trans. (some sections summarized) of Farmacja Polska, 1961, v. 17, no. 9, p. 173-174.

DESCRIPTORS: *Sulfonamides, Drugs, Pharmacology.

Koshino, Fujio.
ANTI-ACETYLCHOLINE, ANTI-5-HYDROXYTRYPTAMINE, ANTI-NICOTINE AND ANTI-HISTAMINE ACTION OF γ-AMINOBUTYRIC ACID AND ITS DERIVATIVES IN ILEUM OF THE GUINEA PIG. [1962] 16p.
Order from K-H $20.00 K-H 11401-f

Trans. of [Nihon Seirigaku Zasshi] (Japan) 1961, v. 23, p. 161-169.

DESCRIPTORS: *Drugs, *Inhibition, *Acetylcholines, Indoles, Nicotine, Vasomotor drugs, *Histamines, *Piperidines, Amino acids, Intestines.

Lebedev, V. P.
EFFECT OF NICOTINE ON PROPRIOCEPTIVE REFLEXES. [1962] 7p.
Order from K-H $8.75 K-H 11679-a

Trans. of #Farmakol[ogiya i] Toksikol[ogiya] (USSR) 1961, v. 24, p. 515-518.

DESCRIPTORS: *Nicotine, *Proprioception, *Reflexes.

Matkovic, Drazen.
HEALTH LEGISLATION OF THE PEOPLE'S REPUBLIC OF SLOVENIA AND PEOPLE'S REPUBLIC OF BOSNIA AND HERZEGOVINA. 12 Feb 62 [5]p. JPRS: 12457.
Order from OTS or SLA $1.10 62-19154

Trans. of Farmaceutski Glasnik (Yugoslavia) 1961 [v. 17] no. 7/8, p. 289.

DESCRIPTORS: Public health, *Pharmacology, Control, *Drugs, Medical supplies.

Popper, E., Popa, L. and others.
CONTROL OF DRUGS CONTAINING MERCURY BY MEANS OF AN ORGANIC MERCAPTAN REAGENT (Controlul Medicamentelor cu Mercur Prin Intermediul Unui Reactiv Organic din Clasa Mercaptanilor). 1 July 61 [11]p. JPRS: 9529.
Order from OTS or SLA $1.60 62-19389

Trans. of Farmacia (Rumania) 1961, v. 9, no. 1, p. 19-23.

DESCRIPTORS: *Drugs, Control, *Mercury, Toxicity, *Thiols, Reagents, Chemical analysis.

The application is discussed of the method for measuring bivalent mercury-containing drugs, as established by the 8th edition of the Rumanian Pharmacopoeia. The authors have used mononaphthylhydrazodicarbonathioamide, a reagent belonging to the mercaptan alcohols, with which, in certain conditions, mercury forms a quantitative precipitate that is stable and readily filtrable. The many assays carried out show that this method for measuring mercury offers certain advantages which led the authors to apply it in the control of drugs containing mercury. This was made possible by the accuracy and swiftness of the method. (Author)

Rapoport, A. M., Kuchina, E. V., and Jordanis, K. A.
EFFECT OF ALCOHOL UPON A DEVELOPED, CONDITIONED MOTOR STEREOTYPE IN MONKEYS. [1962] [9]p. 14 refs.
Order from OTS or SLA $1.10 62-14758

Trans. of mono. [Voprosy Eksperimental'noi Patologii] (Problems of Experimental Pathology) [ed. by] S. N. Braines [Moscow] 1959, p. 123-132.

DESCRIPTORS: *Alcohols, Alcoholism, Pharmacology, Monkeys, *Conditioned reflex, Reaction (Psychology), Inhibition, Motor reactions, Dosage.

With an administration of 30 ml of a 10% solution of alcohol(i.e. 3 ml of pure alcohol, or 0.33 ml of pure alcohol per 1 kg of body weight in monkeys) no changes in the conditioned reflex activity could be observed. With an administration of 30 ml of a 15% solution of alcohol(4.5 ml of pure alcohol) a 3-phase change in the conditioned reflex activity is observed. During the first phase the stereotype becomes more stable. During the second phase it becomes partially disrupted. During the third phase it is restored to normal. Similar changes to a somewhat larger degree are apparent with an administration of 30 ml of a 20% solution of alcohol (i.e. 0.66 ml of pure alcohol per 1 kg of weight). In a number of experiments with the above concentration, an increase in the latent period from 5 to 13 sec was observed as compared with a norm of 2 to 4 sec. Small doses of alcohol first affect the complex processes of the anlytic synthetic activity of the brain. With the administration of the same doses of alcohol no changes in the elementary conditioned motor reflexes was observed. (Author)

Roldan, E. and Escobar, A.
CONTROL OF CONVULSIVE ACTIVITY AND EFFECT OF THE AFFERENT TRANSMISSION PRODUCED BY METHAMINODIAZEPOXIDE: EXPERIMENTAL STUDY ON THE CAT. [1962] 20p.
Order from ATS $29.90 ATS-45P60SP

Trans. of [Escuela Nacional de Medicina]. Inst[ituto de] Estud[ios] Med[icos] y Biol[ogicos]. Bol[etin (Mexico) 1961, v. 19, no. 2, p. 125-153.

DESCRIPTORS: *Convulsions, *Neuromuscular transmission, *Drugs, Tranquilizing drugs.

Snezhnevskii, A. V.
PSYCHOPHARMACOLOGICAL COMPOUNDS. 1 Feb 62, 16p. JPRS: 12410.
Order from OTS $0.50 62-11165

Trans. of Klinicheskaya Meditsina (USSR) 1961, v. 39, no. 10, p. 126-134.

DESCRIPTORS: *Drugs, *Psychotherapy, Classification, Nervous system, Pharmacology.

A survey.

Snezhnevskii, A.
PSYCHOPHARMACOLOGY AND MODERN PSYCHIATRY. 14 May 62 [5]p. JPRS: 13736.
Order from OTS or SLA $1.10 62-24742

Trans. from Meditsinskii Rabotnik (USSR) 1962 [v.]5] no. 24, p. 3.

DESCRIPTORS: *Psychoses, *Drugs, Therapy, *Chlorpromazine, Phenothiazine derivatives, *Psychiatry.

Radiobiology

BULLETIN OF ROENTGENOLOGY AND RADIOLOGY, 1962, VOL. 37, NO. 1: [SELECTED] TRANSLATIONS. 18 June 62 [20]p. JPRS: 14269.
Order from OTS or SLA $1.60 62-25501

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1962, v. 37, no. 1, p. 73-77 and 84-86.

DESCRIPTORS: *Radiobiology, *Scientific organizations *Medical personnel, Training, X-rays.

Contents:
At the Subcommittee on Roentgenology
A Scientific Session of the Scientific Research Institute of Roentgenology and Medical Radiology of the Ministry of Public Health Georgian SSR, by A. G. Narsiya
Far East Conference of Roentgenologists and Radiologists and Radiologists (no. 1) by A. Khakham
Training of roentgenologists, by Yu. N. Sokolov
All-Union Conference on Problems of the Training of Roentgenologists and Radiologists (no. 2).

INVESTIGATION OF EARLY REACTIONS OF THE ORGANISM TO RADIATION EFFECT: [SELECTED PARTS]. 21 Mar 62 [63]p. 62 refs. JPRS: 13154.
Order from OTS or SLA $6.60 62-23594

Trans. of mono. Issledovanie Rannikh Reaktsii Organizma na Radiatsionnoe Vozdeistvie, Moscow, 1960, p. 5-13 and 167-221.

DESCRIPTORS: *Radiobiology, Radiation effects, Radiation sickness, *Nervous system, Tissues (Biology), Physiology, Biochemistry, *Muscles, Electrical properties, *Brain, Conductivity, *Cerebral cortex, Laboratory animals, *Blood pressure, Dosage, *Abdomen, Ionization

Contents:
Radiation reactions as disturbance of regulation capacity of vital phenomena, by G. M. Frank
Features of physicochemical changes in the central nervous system during various periods of radiation reaction, by N. A. Aladzhalova
Effect of radiation on physicochemical processes in the brain: introduction
Effect of radiation on the electroconduction properties of the cerebral cortex
Radiation effect on ultraslow fluctuations of potential in cerebral structures
Influence of irradiation of varying localization and dosage on ultraslow rhythmic fluctuations of potential in the cerebral cortex.

Bryzgunov, V. A.
RADIOMETER FOR MEASURING IODINE-131 IN THE HUMAN THYROID GLAND. [1962] [11]p. 3 refs.
Order from OTS or SLA $1.60 UCRL Trans-682

Trans. of mono. Radiometr dlya Izmereniya Ioda-131 v Shchitovidnoi Zheleze Cheloveka, Moscow, 1960.

DESCRIPTORS: *Radiometers, *Radioactive isotopes, *Iodine, *Thyroid gland, Dosimeters, Scintillation counters, Absorption, Measurement.

The gamma radiation of radio-iodine is registered with a scintillation counter. The calibration is done with a phantom made of organic glass. The sensitivity of the instrument is from 0.02 to 0.04 microcurie.

Lott, H. V.
THE INFLUENCE OF SHORT-WAVE RADIATION ON THE BIOSYNTHESIS OF POLYPHENOLS IN PLANTS. [1962] 21p.
Order from K-H $26.25 K-H 11499-f

Trans. of Planta (West Germany) 1960, v. 55, no. 5, p. 480-[495].
Another trans. is available from SLA $2.60 as 61-20673 [1961] 20p.

DESCRIPTORS: *Radiation effects, *Plants, Biosynthesis, *Phenols, Photosynthesis, Metabolism, *Ultraviolet radiation, Nucleic acids, Proteins, Rutin.

Razomovskii, N. O. and Torchinskaya, O. L.
RÉPARTITION ET FIXATION DU ^{144}Ce DANS LE TISSUS OSSEUX [Distribution and Binding of Ce^{144} in the Bone Tissue] tr. by Mme. Masour. 12 Dec 61 [8]p. 3 refs. CEA Trans. no. R 1432 (text in French).
Order from OTS or SLA $1.10 62-19027

Trans. in French of #Med[itsinskaya] Radiol[ogiya] (USSR) 1960, v. 5, no. 11, p. 46-49.

DESCRIPTORS: Distribution, *Cesium, *Bone, Tissues (Biology), Radioactive isotopes.

Shparo, L. A., Fokina, T. A. and others.
CHARACTERISTICS OF THE REACTION OF A GROWING ORGANISM TO THE IONIZING RADIATION EFFECT, CHAPS. 1-2: SUMMARIES. 5 Mar 62 [30]p. JPRS: 12789.
Order from OTS or SLA $2.60 62-23395

Partial trans. (excerpts) of mono. Osobennosti Reaktsii Rastushchego Organizma na Deistvie Ioniziruyushchei Radiatsii, Moscow, 1960, p. 8-75.

DESCRIPTORS: *Radiation effects, Growth, Age factors, *Ionization, Congenital anomalies, Brain, Skull, Genetics.

Vishnevskii, N. A., Abdullaeva, V. M. and others.
INITIAL SYMPTOMS AND CLASSIFICATION OF A CATARACT. 9 Apr 62 [9]p. JPRS: 13369.
Order from OTS or SLA $1.10 62-23823

Trans. of Vestnik Oftal'mologii (USSR) 1961 [v. 74] no. 5, p. 65-67.

DESCRIPTORS: *Radiation injuries, Eyes, Pathology, *Crystalline lens, *Diagnosis, Ophthalmology.

Analysis of the available data on the development of radiation cataract permit a more precise definition of the initial symptoms of radiation cataract, to outline its development stages and to create a classification. Granularity with polychrome irridescence under the posterior capsule of the lens cannot be considered as an initial symptom of radiation cataract, since this symptom is observed in the majority of control individuals and its incidence considerably increases with age. As the initial symptom of radiation cataract, it is necessary to consider the appearance of an accumulation of punctate turbidites at the posterior pole of the lens which are visible in the passing light and are detected by means of biomicroscopy in the posterior cortical layers. The basic supporting point in the diagnosis of initial symptoms

of radiation cataract is the combination of local changes in the lens, characteristic for the initial stage of radiation cataract, with the effect on the organism of ionizing radiation of a definite type, dose, and conditions of irradiation. (Author)

Surgery

ADVANCES IN SURGERY IN THE USSR. 6 June 62 [40]p. 17 refs. JPRS: 14020.
Order from OTS or SLA $3.60 62-25046

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1962, v. 7, no. 2, p. 3-8, 16-19, 66-70, 94-95.

DESCRIPTORS: *Surgery, *Regeneration, *Cybernetics, Diagnosis, *Drugs, *Electroencephalography, *Shock therapy, Tourniquets, Burns, *Plasma substitutes, *Blood circulation, Capillaries.

Contents:
Types of regeneration, by D. S. Sarkisov
Cybernetics in surgery: the phase interval method in diagnosis, by M. L. Bykhovskii
Neuroplegic drugs in the prevention of "tourniquet" shock (according to electroencephalographic data) by N. P. Bekhtereva and F. M. Danovich
Effects of plasma substitutes on capillary circulation during burn shock, by K. F. Dogaeva.

EXPERIMENTAL SURGERY AND ANAESTHESIOLOGY, 1962, NO. 1: [SELECTED ARTICLES]. 11 May 62 [24]p. 32 refs. JPRS: 13728.
Order from OTS or SLA $2.60 62-24709

Trans. of Eksperimental'naya Khirurgiya i Anesteziologiya (USSR) 1962 [v. 7] no. 1, p. 41-42, 50-53, 55-61.

DESCRIPTORS: *Surgery, *Anesthesia, *Blood transfusions, Lymphatic system, *Transplantation, Immunology, Cells, (Biology), Trypsin, Skin, Embryos, *Burns, Phagocytosis, Leukocytes.

Contents:
A new source of obtaining extra blood for hemotransfusions, by M. I. Dolgina and others
Importance of the local lymphatic system for the development of transplantation immunity and for its overcoming, by Ya. Vrubel
The use of trypsin-treated cells of embryonic skin for the replacement of skin defects in rabbits under experimental conditions, by V. I. Marchenko and S. P. Ushakova
Phagocytic activity of leucocytes in various phases of burn disease, by Yu. M. Panova.

PROBLEMS ON REANIMATION AND REANIMATOLOGY AND PROCEEDINGS OF TWO MEETINGS OF THE SURGICAL SOCIETY OF MOSCOW AND MOSKOVSKAYA OBLAST. 16 Feb 62 [38]p. 31 refs. JPRS: 12557.
Order from OTS or SLA $3.60 62-24786

Trans. of Khirurgiya (USSR) 1961, v. 37, no. 11, p. 3-20 and 154-158.

DESCRIPTORS: *Surgery, Conferences, *Heart arrest, Resuscitation, Traumatic shock, Heart, *Artifical heart, Hypothermia, *Tumors, *Adrenal Glands, Thrombosis, Embolism, Anoxia.

Contents:
The problem of reanimation (restoration of vital functions of the organism, by B. V. Petrovskii
Reanimatology and its problems, by V. A. Negovskii
Proceedings of the meeting of the Surgical Society of Moscow and Moskovskaya Oblast (no. 1732) 9 June 61
Proceedings of the meeting of the Surgical Society of Moscow and Moskovskaya Oblast (no. 1733) 23 June 61.

STRIDES IN SURGERY IN THE USSR. 11 Aug 61 [58]p. 92 refs. JPRS: 9920.
Order from OTS or SLA $5.60 61-27676

Trans. of Novyi Khirurgicheskii Arkhiv (USSR) 1961, [v. 40] no. 4, p. 34-57, 66-67, 75-81.

DESCRIPTORS: *Surgery, Excision, *Burns, Tissues (Biology), *Transplantation, Healing, Morphology, Barbiturates, Tranquilizing drugs, *Anesthesia, *Diaphragm, Artificial heart, Lungs, Medical equipment.

Contents:
Evaluation of the efficacy of primary surgical debridement of burns by the Vil'bushevich method, by N. A. Orlov and N. I. Lavrent'ev
Certain aspects of the tissue heterotransplantation problem, by A. A. Bocharov and others
Clinical and morphological characteristics of extensive granulating wounds in burn exhaustion, by V. M. Pinchuk and V. I. Filatov
Clinical observations of the combined effect of neuroplegics and anesthetics with the use of potentiated anesthesia, by V. A. Gologorskii
Elimination of a gastropleural fistula through a one-stage plastic repair of the diaphragm with frozen pericardium, by P. P. Kovalenko and G. P. Eteriya
"Heart-lung" apparatus and its experimental testing, by I. L. Lissov.

Shevalev, V. E.
CICATRICIAL XEROSIS OF THE EYE. Dec 61, approx. 170p.
Order from CB $12.00

Trans. of unidentified Russian mono Rubtsovyi Kseroz Glaza, Kiev, 1959, 174p.

DESCRIPTORS: *Eye, Pathology, Surgery, *Cornea, *Transplantation, Ducts, *Salivary glands, Secretion, Visual acuity, Etiology, Therapy, *Ophthalmology

Bei-Bienko, G. Ya. and Mishchenko, L. L.
[GRASSHOPPER FAUNA] ACRIDID FAUNA OF THE USSR AND ADJACENT COUNTRIES [Saranchevye Fauny SSSR i Sopredel'nykh Stran] tr. by R. Ericson. Nov 58 [139]p. (figs. refs. omitted).
Order from OTS or SLA $10.50 62-15621

Trans. of [Opredeliteli po Faune SSSR. 1951] v. 38, pt. 1, p. 149-183.

DESCRIPTORS: *Insects, *Grasshoppers, Classification, Morphology, Distribution.

Bei-Bienko, G. Ya. and Mishchenko, L. L.
GRASSHOPPER FAUNA [ACRIDID FAUNA] OF THE USSR AND ADJACENT LANDS [Saranchevye Fauny SSSR i Sopredel'nykh Stran] tr. by R. Ericson. 25 Mar 58, 1p. [7 figs. omitted] 1 ref.
Order from OTS or SLA $1.10 61-19199

Partial trans. of Opredeliteli po Faune SSSR [1951] v. 38, pt. 1, p. 26-29.

DESCRIPTORS: *Insects, *Grasshoppers, Reprodution *Eggs.

Danilevskii, A. S. and Glinyanaya, E. N.
VARIATION OF THE GONOTROPHIC CYCLE AND THE IMAGO DIAPAUSE WITH THE LENGTH OF THE DAY IN BLOOD-SUCKING MOSQUITOES. [1961] [16]p. 9 refs.
Order from OTS or SLA $1.60 61-23973

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1958, [no. 240] p. 34-51.

DESCRIPTORS: *Mosquitoes, Ecology, Age, Growth, Sex, Hormones, Climatic factors, *Photosensitivity, *Light adaptation.

The seasonal change in the duration of daylight is the principal ecological factor that regulates the onset of the imago diapause in the ordinary and malarial mosquito. The photoperiodic reaction is manifested only in the females of the species tested. Changes in the length of the day do not affect the physiological state of the males. Sensitivity to the length of the day is manifested in the larval and imago stages. Development during the short day promotes the onset of the diapause. In the ordinary mosquito (Culex pipiens pipiens L.) the diapause may be brought about by the action of short days (12 hours of light) on winged females, irrespective of the temperature and the regime of larval development. In winged females of the malarial mosquito (Anopheles maculipennis messeae L.) the photoperiodic reaction is fully manifest only when the larvae develop during short days. Summer females and those developing in the larval stage during long days react to the rhythm of lighting only a low temperatures. Our findings explain the occurrence of the "innate diapause" as well as the instances of diapause after gonotrophic activity. The diapause is manifested by profound changes in feeding and digestion. In females of the ordinary mosquito it is manifested primarily by a refusal to draw blood, and in the malarial mosquito by gonotrophic dissociation. (Author)

Kawecki, Z.
STUDIES ON THE GENUS LECANIUM BURM. IV. MATERIALS TO A MONOGRAPH OF THE BROWN SCALE, LECANIUM CORNI BOUCHE, MARCHAL ♀ NEC ♂) (HOMOPTERA, COCCOIDEA, LECANIIDAE) (Studia nad Rodzajem Lecanium Burm. IV. Materialy do Monografii Misecznika Sliwowego, Lecanium Corni Bouche, Marchal (♀ Nec ♂) (Homoptera, Coccoidea, Lecaniidae)) tr. by K. Zacwilichowska. 1962, 63p. 151 refs. PL-480 Agr.
Order from OTS $0.50 60-21404

Trans. of Annales Zoologici (Poland) 1958, v. 4, no. 9, p. 135-230.

DESCRIPTORS: *Parasites, Insects, *Homoptera, Morphology, Reproduction, Growth, Distribution, Classification, Epidemiology, Control, *Plants.
Contents:
Biology and morphology of the Brown Scale
Geographic distribution of the Brown Scale and the number of its generations in a year
The name of the Brown Scale
The appearance of males
Hosts of the Brown Scale and its variability under the influence of a host plant
Epidemiology of the Brown Scale
Control of the Brown Scale
(See also 60-21405)

Mulicki, Zygmunt.
ECOLOGY OF THE MORE IMPORTANT BENTHIC INVERTEBRATES IN THE BALTIC SEA (Ekologia Wazniejszych Bezkregowcow Dennych Baltyku) tr. by M. Chelkowski. 1961, 58p. 47 refs. PL-480 Int.
Order from OTS $0.50 60-21297

Trans. of Morski Instytut Rybacki. Prace (Poland) 1957 [v. 17] no. 9, p. 313-379.

DESCRIPTORS: Marine biology, *Aquatic animals, *Mollusca, *Crustacea, *Worms, *Ecology, Distribution.

CHEMISTRY

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNAL CHEMISTRY, 1961, NOS. 6-7. 2 Feb 62, 30p. JPRS: 12271.
Order from OTS $1.00 62-11135

Trans. of selected abstracts from Referativnyi Zhurnal. Khimiya (USSR) 1961, nos. 6-7.

DESCRIPTORS: *Chemistry, Literature, Abstracting, Gold, Radioactive isotopes, Nuclear reactions, Electrolytic cells, Garnet, Titration, Germanium, Lead,

Manganese, Ores, Hydrazines, Cyanides, Beryllium compounds, Oxides, Beryl, Titanium compounds, Chlorides, Semiconductors, Iodine, Cements, Gypsum, Slag, Sulfamide, Bitumens, Hydrocarbons, Luminous pigments, Pentanes, Catalysts, Organic compounds, Carbon, Hydrogen, Ethers, Alcohols, Glycols, Propanols, Charcoal, Shales, Coal tar, Petroleum, Milk, Lactobacillus, Carbohydrates, Electrolysis, Flotation, Cotton textiles, Silicon compounds.

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE] 1941, NO. 4/5: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 5p.
Order from OTS or SLA $1.10 62-14131

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 4/5, p. 499-518, 521-530, 545-554, 556-564, 621-636.

DESCRIPTORS: *Chemistry, Literature, Abstracting, *Magnesium compounds, Organic compounds, Grignard reagents, *Azo compounds, Alkyl radicals, Ethyl ethers, *Acetylene derivatives, Carbinols, Methyl radicals, Vinyl radicals, Ethynyl radicals, Acetylenes, Allyl radicals, Phenols, Condensation reactions, Water, Dicumarol, Metals, *Corrosion.
Contents:
Research on magnesium-organic compounds. II. Interaction of the Grignard reagent with OXO compounds, by A. N. Nesmeyanov and V. A. Sazonova
Interaction of aromatic diazo compounds with compounds of the type of alkyl acetoacetic esters, by V. V. Feofilaktov
Acetylene derivatives. XXII. Condensation of dimethylvinylethynylcarbinol and vinylisopropenylacetylene with 0- and m-cresols, by I. N. Nazarov and F. I. Gotman
Acetylene derivatives. XXIII. Dimerization of dimethylvinylethynylcarbinol with liberation of water and formation of 1, 1, 3, 3-tetramethyl-4-vinylisocoumaran, by I. N. Nazarov and G. P. Verkholetova
Conference on corrosion of metals (no. 2) organized by the Department of Chemistry, Academy of Sciences USSR, 15-19 Jan 41, by E. I. Gurovich
Session of the Department of Chemistry, Academy of Sciences USSR, 25-26 Mar 41, by S. B. Sh.

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIV. OF CHEMICAL SCIENCE] 1941, NO. 6: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 4p. 5 refs.
Order from OTS or SLA $1.10 62-14132

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1941, no. 6, p. 643-650, 661-667, 673-680, 695-708.

DESCRIPTORS: *Chemistry, Literature, Abstracting, *Intermetallic compounds, Magnesium alloys, Aluminum alloys, Alloys, *Cerium, Metals, Vapors, Salts, Coatings, Polycyclic compounds, *Halogenation, Theory.

Contents:
To the scientists of all countries
N. S. Kurnakov's theory of intermetallic compounds, by V. A. Nemilov
Effect of cerium on the properties of magnesium-aluminum alloys, by V. I. Mikheeva
Mutual displacement of metals from vapors of their salts and application of these processes for protection of metals, by N. A. Izgaryshev
Research on polycyclic compounds. IV. Mechanism of bromination of benzonaphthone: theory of halogenation, by A. M. Lukin

[BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR, DIV. OF CHEMICAL SCIENCE] 1942, NO. 1: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 5p. 10 refs.
Order from OTS or SLA $1.10 62-14133

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1942, no. 1, p. 8-53, 55-64, 66-79 and inside cover page.
##A complete trans. of p. 8-13 is available from OTS or SLA $1.60 as 62-15711, TRC Trans-1054, NLL M. 4639 [1961] [12]p.

DESCRIPTORS: *Chemistry, Literature, Abstracting, *Ethyl radicals, Azo radicals, *Acetates, Tin compounds, Iron compounds, Chlorides, Chemical reactions, Organic compounds, *Mercury compounds, Hydrocarbons, Dehydrogenation, Gases, Rubber, Synthesis, Carbon compounds, Monoxides, Cobalt catalysts, Polycyclic compounds, *Acetylene derivatives, Halogens, *Carbinols, Vinyl radicals, Ethynyl radicals, Gasoline.

Contents:
##Interaction of ethyl diazoacetate with chlorides of tin and iron, by A. N. Nesmeyanov and A. E. Segalevich
Organmercuric compounds. XXI. Properties and structure of acetylene derivatives of mercury, by R. Kh. Freidlina
Catalytic dehydrogenation of hydrocarbons and its application to synthesis of rubber from gases, by A. A. Balandin
Interaction of carbon monoxide with the cobalt catalyst used in synthesis of gasoline from water gas, by Ya. T. Eidus and N. D. Zelinskii
Research on polycyclic compounds. V. Interaction of benzonaphthone with chlorine, by A. M. Lukin
Acetylene derivatives. XXIV. Halogen derivatives of vinylethynylcarbinols, by I. N. Nazarov and Ya. M. Yanbikov
News of the Academy of Sciences USSR

IN THE COMMITTEE ON INVENTIONS AND DISCOVERIES AT THE COUNCIL OF MINISTERS OF THE USSR: RESOLUTION. 7 May 62 [6]p. JPRS:13718.
Order from OTS or SLA $1.10 62-24737

Trans. of #Byulleten' Izobretenii (USSR) 1961, no. 17, p. 5-7.

DESCRIPTORS: *Inventions, *Patents, *Chemistry, *Chemical industry.

JOURNAL OF APPLIED CHEMISTRY, 1944, VOL. 17, NO. 9/10: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 6p. 11 refs.
Order from OTS or SLA $1.10 62-14157

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1944, v. 17, no. 9/10, p. 487-494, 527-528. ##533-537, ##552-556.
##Complete translations are available separately.

DESCRIPTORS: *Chemistry, Literature, Abstracting, Carbon, Adsorbents, Organic solvents, Vapors, Adsorption, *Chlorides, *Allyl radicals, Pressure, *Explosives, *Combustion, Detonation waves, Production, Pyrocatechol, Synthesis, *Creosote,

Contents:
Research on recovering vapors of volatile solvents on solid sorbents. VIII. Sorption of vapors of binary solvents on activated carbon, by E. V. Alekseevskii and N. D. Gorchakov
Pressure of saturated vapor of allyl chloride, by I. I. Ioffe and E. S. Yampol'skaya
##Mechanism of the transition of combustion, of explosives into a detonation, by K. K. Andreev
##Preparation of pyrocatechol from wood creosote by decomposition of phenol ethers of cresote under atmospheric pressure, II by V. P. Sumarkov and others.

JOURNAL OF APPLIED CHEMISTRY, 1945, VOL. 18, NO. 6: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 3p.
Order from OTS or SLA $1.10 62-14162

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1945, v. 18, no. 6, p. ##313 and 372-373.
##A complete trans. of p. 313-321 is available from SLA as RT-3405.

DESCRIPTORS: *Chemistry, Literature, Abstracting, Ammonia, Catalysts, Bactericides, Determination.

Contents:
##Selection of new materials for ammonium catalysts, by V. M. Grinevich
Determination of small amounts of antiseptics of the type of zefirol, by G. A. Garkusha and T. N. Pater.

JOURNAL OF GENERAL CHEMISTRY, 1939, VOL. 9, NO. 13: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 5p.
Order from OTS or SLA $1.10 62-14152

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1939, v. 9, no. 13, p. 1153-1166 and 1188-1242.
A complete trans. of p. 1155-1157 is available from SLA as RT-1600.

DESCRIPTORS: *Chemistry, Literature, Abstracting, *Ethanes, Chlorides, Magnesium compounds, Bromides, *Grignard reactions, Aluminum compounds, Fluorides, *Alkali metals, Organic compounds, *Selenium compounds, Dioxides, Aldehydes, *Ketones, Organic acids, *Oxidation-reduction reactions, Solids, *Organic solvents, Halogens, *Allenes, *Butadienes, Methyl radicals, Chlorides.

Contents:
Action of hexachloroethane on Grignard compounds, by V. V. Korshak
##Solubility of double fluorides of aluminum and alkali metals, by I. Tananaev and Sh. Talipov
Mechanism of oxidation of organic compounds with selenium dioxide. V. Kinetics of oxidation of aldehydes, by N. N. Mel'nikov and M. S. Rokitskaya
Viscosity of the systems ketone-organic acid, I., by V. V. Udovenko
Kinetics of oxidation-reduction potentials, I-III, by A. L. Rotinyan
Solubility of a solid in a binary mixed solvent. I. Theoretical, by E. I. Akhumov
Solubility of a solid in a binary mixed solvent. II. Calculation, by E. I. Akhumov
Research on isomeric conversions of unsaturated halogen derivatives of the aliphatic series. II. Hydrolysis of the allene 3-methyl-1-chloro-1, 2-butadiene, by T. A. Favorskaya.

JOURNAL OF INORGANIC CHEMISTRY, 1956, VOL. 1, NO. 1. 1962, 204p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4582

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, no. 1, p. 3-[188].

DESCRIPTORS: *Inorganic substances, *Platinum compounds, *Chromium compounds, *Oxidation-reduction reactions, *Vanadium compounds, Halides, *Uranium compounds, Arsenates, *Tryosine, *Yttrium compounds, *Cesium compounds, *Lithium compounds, *Iron compounds, Cyanides, *Salicylates, Ammino compounds, *Copper compounds, Esters, Glycines, *Ions, *Atomic radii, *Sodium compounds, *Magnesium compounds, Sulfates, *Barium compounds, *Beryllium compounds, *Lead compounds, *Niobium compounds, *Metallic compounds, *Aluminum alloys, *Thallium compounds, *Cadmium compounds, *Radioactive isotopes, *Dolomite, *Strontium, *Zirconium compounds.

Contents:
Development of some trends in inorganic chemistry in the USSR, by I. I. Chernyaev
Thermal dissociation of platinum halides. Communication 1. Platinum bromides, by S. A. Shchukarev, T. A. Tolmacheva and others
Thermal dissociation of platinum halides. Communication 2. Platinum chlorides, by S. A. Shchukarev, M. A. Oranskaya, and T. S. Shemyakina
Compounds of tetravalent chromium, by N. I. Lobanov
Some anomalies of oxidation-reduction reactions, by N. A. Tananaev
Saturation pressure of vanadium tetrachloride vapor, by S. A. Shchukarev, M. A. Oranskaya and others
Solubility product of uranyl arsenates, by V. G. Chuklantsev and A. K. Sharova
Interaction of groups within the inner sphere of complex compounds, by A. A. Grinberg and A. I. Dobroborskaya
Complex compounds of bivalent platinum with tyrosine, by L. M. Volshtein, and N. S. Velikanova
Ferrocyanides of yttrium and cerium, by I. V. Tananaev and G. B. Seifer
Studies of mixed lithium and cesium ferrocyanide, by I. V. Tananaev and G. B. Seifer
The solubility series of ferrocyanides, by I. V.

Tananaev, M. A. Glushkova, and G. B. Seifer
Complex salicylates of certain metals, by O. E. Zvyagintsev and B. N. Sudarikov
Preparation and properties of concentrated solutions of diamminecopper (I) acetate, diamminecopper (I) formate, and cuprous glycinate, by S. A. Voznesenskii and N. A. Rodionov
Radii of eight-electron cations, by A. F. Kapustinskii
Specific properties of ions with thirteen electrons, by K. B. Yatsimirskii
A physicochemical study of binary systems: water-sodium sulfate and water-magnesium sulfate, by G. G. Urazov and L. S. Efimenko
Investigation of the system BaF_2-BeF_2, by D. F. Kirkina, A. V. Novoselova, and Yu. P. Simanov
Reactions between salts and metals in the molten state; Interaction in the system $PbCl_2 + Mg \rightarrow MgCl_2 + Pb$, by A. P. Palkin and V. T. Redchenko
Thermal and tensimetric study of the system $NbCl_5$ - $ZrCl_4$ - NaCl, by I. S. Morozov and B. G. Korshunov
The effect of ternary metallic compound E(AlCrMg) on heat-resistance of aluminum alloys, by B. K. Vul'f and M. N. Chernov
Complex formation and double decomposition in the reciprocal system of thallium and cadmium chlorides and sulfates, by A. K. Sementsova, A. G. Bergman, and D. S. Lesnykh
Adsorption of radioactive isotopes on ferric hydroxide, by V. V. Pushkarev
The interaction of half-calcined dolomite and strontium ions in aqueous solutions, by V. F. Bagretsov
Rare metals (handbook) by E. I. Gurovich: book review by C. A. Hampel
Author and subject indexes.

Ivanov, K. I. and Savinova, V. K.
DECAHYDRONAPHTHALENE PEROXIDE. [1962] 5p.
Order from ATS $8.25 ATS-27N58R

Trans. of Akademiya Nauk SSSR. Doklady, 1945, v. 48, no. 1, p. 32-35.

DESCRIPTORS: *Peroxides, *Naphthalenes, *Hydrogen.

Karachevtsev, G. V., Markin, M. I., and Tal'roze, V. L.
AN INVESTIGATION OF CHARGE TRANSFER FROM THE THERMAL IONS A^+, Kr^+, AND Xe^+ TO THE MOLECULES Ch_4, C_2H_6, AND C_2H_4 BY THE IMPULSE METHOD. [1962] 1p.
Order from ATS $2.00 ATS-22P59R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. Izvest[iya] 1961, no. 8, p. 1528.

DESCRIPTORS: *Ions, *Rare gases, Argon, Krypton, Xenon, *Hydrocarbons, Methanes, Ethanes, Ethylenes.

Kobashi, Yusuke and Sakaguchi, Siochi.
THE COMBUSTION TEMPERATURE, COMBUSTIBILITY AND AMOUNT OF NICOTINE TRANSFERRED TO THE SMOKE OF FOREIGN-MADE CIGARETTES. Oct 60, 7p.
Order from K-H $8.75 K-H 10309-b

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1960, no. 102, p. 10-12.

DESCRIPTORS: *Nicotine, *Tobacco, *Cigarettes, *Smokes, *Combustion.

Kobashi [Yusuke], Sakaguichi, Siochi, and Izawa, Masao.
INFLUENCE OF MOISTURE CONTENT OF CIGARETTES ON COMBUSTION TEMPERATURE AND AMOUNT OF NICOTINE TRANSFERRED INTO CIGARETTE SMOKE. Oct 60, 10p.
Order from K-H $12.50 K-H 10309-a

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1960, no. 102, p. 6-9.

DESCRIPTORS: *Nicotine, *Tobacco, *Cigarettes, *Smokes, *Combustion, Moisture.

Kobashi, Y[usuke] and Sakaguchi, Siochi.
INVESTIGATION CONCERNING THE NICOTINE TRANSFERRED TO SMOKE OF CIGARETTES TO WHICH NICOTINE HAS BEEN ADDED. Oct 60, 7p.
Order from K-H $8.75 K-H 10309-c

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1960, no. 102, p. 13-15.

DESCRIPTORS: *Nicotine, *Tobacco, *Cigarettes, *Smokes.

Analytical Chemistry

Filin Koldakov, B. V. and Popova, L. P.
DETERMINATION OF ACIDS IN TOBACCO SMOKE BY POTENTIOMETRIC TITRATION IN A NON-AQUEOUS MEDIUM. Apr 62, 10p.
Order from K-H $12.50 K-H 11401-b

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Pishchevaya Tekhnol[ogiya] (USSR) 1960, no. 5, p. 165-169.

DESCRIPTORS: *Tobacco, *Smokes, *Acids, *Titration.

Giovannozzi-Sermanni, Giovanni.
ANALYTICAL RESEARCHES ON NICOTIANA TABACUM WITH PAPER CHROMATOGRAPHY. [1962] 10p.
Order from K-H $12.50 K-H 11860

Trans. of il Tabacco (Italy) 1957, v. 61, July/Sep, p. 349-357.

DESCRIPTORS: *Tobacco, *Chromatographic analysis, Plants.

Inoue, R., Ouchi, S., and Yasuhira, S.
THERMAL DEGRADATION OF POLYISOBUTENE. Pt. 3 of Studies of Radical Chain Depolymerization. [1962] 8p.
Order from ATS $11.00 ATS-58P60J

Trans. of Kobunshi Kagaku (Japan) 1956, v. 13, no. 129, p. 31-37.

DESCRIPTORS: *Butenes, *Polymers, Deterioration, Chemical analysis.

Kheifits, L. A., Shulov, L. M. and Belov, V. N.
THE COMPOSITION OF MUSTERONE AND THE STRUCTURE OF ITS INDIVIDUAL COMPONENTS. [1962] 4p.
Order from ATS $7.00 ATS-64P60R

Trans. of Masloboino-Zhirovaya Prom[yshlennost'] (USSR) 1962, v. 28, no. 1, p. 30-32.

DESCRIPTORS: *Deodorants, *Ketones, Chemical analysis, Molecular structure.

Khmel'nitskii, R. A., Zimina, K. I., and Polyakova, A. A.
MASS-SPECTROMETRIC METHOD FOR THE ANALYSIS OF GASOLINES. [1962] 9p. 13 refs.
Order from OTS or SLA $1.10 62-16120

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 6, p. 55-60.
Another trans. is available from ATS $11.40 as ATS-54N56R [1961] 8p.

DESCRIPTORS: *Gasoline, Spectrographic analysis, *Mass spectrometers, Chemical analysis.

A mass-spectrometric method for investigation of gasolines, boiling up to 200 C was developed. The method can be utilized for determination of contents in paraffinic hydrocarbons with normal and isostructure, in naphthenic hydrocarbons with 5- and six-member cycle, in monoolefins, alkylbenzenes, alkenylbenzenes, in sum of diolefinic and cycloolefinic hydrocarbons, and also for distribution of these groups by molecular weights with an average relative error of 5-15%. (Author)

Klimova, V. A., Antipova, T. A., and Mukhina, G. K.
SIMULTANEOUS DETERMINATION OF CARBON, HYDROGEN, AND GALOGENS OR SULFUR BY COMBUSTION WITH DEFLAGRATION. [1962] 5p.
Order from ATS $7.00 ATS-62P60R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1962, no. 1, p. 19-22.

DESCRIPTORS: *Carbon, *Hydrogen, *Sulfur, Determination, Combustion, Chemical reactions, Heat of reaction.

Kuhn, H. and Forejtnik, I.
CRITICAL CONTRIBUTION TO THE DETERMINATION OF NORNICOTINE IN TOBACCO. [1962].
Order from K-H $32.50 K-H 10684-b

Trans. of Fachliche Mitteilingen d[er] Österreichischen Tabakregie (Austria) 1960, no. 1, p. 1-11.

DESCRIPTORS: *Nicotine, *Tobacco, Chemical analysis.

Mokhnachev, K. G.
DETERMINATION OF BOUND WATER-SOLUBLE CARBOHYDRATES IN TOBACCO. [1962] 8p.
Order from K-H $10.00 K-H 11455-f

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Pishchevaya Tekhnol[ogiya] (USSR) 1961, no. 2, p. 54-57.

DESCRIPTORS: *Tobacco, Chemical analysis, *Carbohydrates, Determination.

Platek, Jerry and Brzozka, Danuta.
QUANTITATIVE ESTIMATION OF THE TOTAL CONTENT OF TOBACCO ALKALOIDS BY MEANS OF "CATIONIZED" FILTER PAPER. [1962] 12p.
Order from K-H $15.00 K-H 11634

Trans. of Chemia Analityczna (Poland) 1961, v. 6, p. 551ff.

DESCRIPTORS: *Tobacco, *Alkaloids, Chemical analysis, Paper, Particulate filters, *Filter papers.

Polezhaev, N. G.
A NEW METHOD OF DETERMINING FREE SILICA IN THE PRESENCE OF SILICATES (Novyi Metod Opreseleniya Dvuokisi Kremniya v Prisutstvii Silikatov) tr. by L. Meyer. Sep 60 [11]p. S. M. R. E. Trans. no. 4421; NLL M. 2681.
Order from OTS or SLA $1.60 62-24077

Trans. of mono. Opredelenie Syobodnoi Dvuokisi Kromniya v Gornykh Porodakh i Rudnichnoi Pyli, Moscow, 1959, p. 33-43.

DESCRIPTORS: *Silicates, *Silicon compounds, *Dioxides, Determination, Reagents, Quantitative analysis, Colorimetry.

The free SiO_2 is broken up and eliminated from the sample, while the silicates are retained in the sample in a practically unchanged state. A flux is used which breaks up the free silica but does not effect the silicates. In the subsequent treatment of the flux with an alkaline solvent (Na_2CO_3) only the free SiO_2 is dissolved in the form of a silicate of alkali metal, while the bound silica is not dissolved. The method has the advantage that the difference in the solubility of silicates, which has a negative effect on the accuracy of results obtained with existing chemical methods for determining free SiO_2 (the tendency to

obtain higher results) is unimportant. Stainless steel crucibles can be used in place of platinum ones (in some instances so-called teaspoons of stainless steel were used with success).

Schulz, G.
DEVELOPMENT OF A TESTING METHOD FOR DETERMINATION OF FREE FORMALDEHYDE IN PHOTOGRAPHIC PAPERS, MELAMINE RESIN SOLUTIONS AND MELAMINE RESINS. Dec 61, 9p. 22 refs.
Order from SLA $1.10 62-14492

Trans. of Zellstoff u[nd] Papier (Germany) 1960, v. 9, no. 11, p. 422ff.

DESCRIPTORS: *Photographic paper, *Melamine formaldehyde resins, *Formaldehyde, Test methods.

The possibilities of formaldehyde identification in general and in photographic base papers in particular are described, after a literature survey. By means of special apparatus the formaldehyde driven out of photographic paper, melamine resin or melamine resin solution is absorbed in water and titrimetrically determined. The method is suitable for the precise analysis of formaldehyde. The values may be regarded as statistically reliable. (Author)

Organic Chemistry

ORGANIC CHEMICAL INDUSTRY, 1940, VOL. 7, NO. 12: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1961] 2p.
Order from OTS or SLA $1.10 62-14100

Abstract trans. of Promyshlennost' Organicheskoi Khimii (USSR) 1940, v. 7, no. 12, p. 654-661, 663-666, 671-674.

DESCRIPTORS: Chemical industry, *Chemistry, Industry, *Organic compounds, Literature, Abstracting, *Resins, *Vinyl chlorides, Preparation, *Ketones, *Methyl radicals, Vinyl radicals, Synthesis, Acetylenes, Hydrates, Pressure, *Ammonia, *Amines, *Aldehydes, Ethyl radicals, Acetaldehydes, Chemical reactions, Alkylation.

Contents:
Research on polychlorovinyl resins, by I. P. Losev
Methods of preparation of polychlorovinyl resins, by A. A. Surov and S. A. Borisov
Synthesis of methyl vinyl ketone by hydration of vinylacetylene under pressure, by A. N. Churbakov and V. N. Ryazantsev
Alkylation of ammonia and amines with aldehydes and ketones, preparation of ethylamines from acetaldehyde, by A. M. Grigorovskii and others.

PROCEDURE FOR THE CONTINUOUS PREPARATION OF ACRYLAMIDE. [1962] 3p.
Order from ATS $6.00 ATS-78P591

Trans. of Italian patent 613, 859, by Henkel & Cie. G. m. b. H., Dusseldorf.
DESCRIPTORS: *Acrylamides, Synthesis.

PROCESS AND APPARATUS FOR THE PREPARATION OF 1, 4-DIMETHYLOLCYCLOHEXANE. [1962] 9p.
Order from ATS $15.25 ATS-08P60G

Trans. of German printed patent application 1, 076, 125, by Eastman Kodak Co., Rochester, N. Y. [pub. 1960].

DESCRIPTORS: *Cyclohexanes, Hexanes, *Methyl radicals, *Hydroxides, Synthesis, Laboratory equipment, Design.

Arbuzov, B. A., Vinogradova, V. S., and Polezhaeva, N. A.
ESTERS OF B-KETOPHOSPHONIC ACIDS. 9. REACTION OF 2, 6-DIBROMO- AND 2, 6-DICHLOROCYCLOHEXANONE WITH ONE AND WITH TWO MOLES OF TRIETHYL PHOSPHITE. [1962] 8p.
Order from ATS $9.75 ATS-83P58R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 11, p. 2020-2028.

DESCRIPTORS: Esters, *Phosphonic acids, Bromides, Cyclohexanones, *Hexanones, *Phosphites, *Ethyl radicals, *Chemical reactions.

See also ATS 92N47R

Baramboim, N. K.
MECHANICAL DEGRADATION OF POLYSTYRENE AND POLY(METHYL METHACRYLATE) IN THE PRESENCE OF VARIOUS ACCEPTORS. [1962] 8p.
Order from ATS $11.60 ATS-37P60R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 1, p. 109-115.

DESCRIPTORS: *Polymers, *Styrenes, *Acrylic resins, *Methyl radicals, Mechanical properties, Deterioration, Chemical reactions.

Chulanovskii, V. M.
DISPLACEMENT OF THE INFRA-RED ABSORPTION BAND OF THE C=O GROUP OF ACETONE IN SOLUTIONS [Smeschenie Infrakrasnoi Polosy Pogloshcheniya Gruppy C=O Atsetona v Rastvorakh]. [1961] 5p. 4 refs. MDF C 108.
Order from OTS $0.50 62-11416

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 3, p. 457-459.

DESCRIPTORS: *Acetones, Carbonyl radicals, Solutions, Oscillation, *Infrared spectroscopy, Absorption spectra, Organic solvents, Hydroxides, Chemical reactions.

The effect is studied of various solvents, in particular those containing an OH group, on the oscillations of the C=O group of acetone with the idea of explaining whether the displacement of the ν=o oscillations in the (OH). (OCR) case is exceptionally great to the same extent as occurs in the action of adjacent molecules on the ν_O hydroxyl group. (Author)

Chulanovskii, V. M.
INFRA-RED ABSORPTION BAND OF THE C-O GROUP OF METHYL ALCOHOL AND ITS SOLUTIONS [Infrakrasnaya Polosa Pogloscheniya Gruppy C-O Metilovogo Spirta i Ego Rastvorov]. [1961] 6p. 5 refs. MDF C 109.
Order from OTS $0.50 62-11430

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 4, p. 649-652.

DESCRIPTORS: *Methanols, Carbonyl radicals, Solutions, *Infrared spectroscopy, Absorption spectra, Organic solvents, Hydroxides, Chemical reactions.

Experiments indicate that the mixed association band of the alcohol molecules, in particular, in substances containing oxygen, should be sought much nearer to the monomeric alcohol molecule band that has been done until now. The special position of the hydrogen bond among the other types of bonds in both strength and character is confirmed. This special type of bond is determined by the special location of the proton in the unperturbed OH, HCl, NH groups etc. (See also 62-11416).

Crespi, G. and Bruzzone, M.
DEHYDROCHLORINATION AND VULCANIZATION OF CHLORINATED ETHYLENE-PROPYLENE COPOLYMERS. [1962] 9p. 4 refs.
Order from CTS(Chem) $9.60 CTS(Chem)-266
subsequent copies $1.60/ea.

Trans. of [la] Chimica e [l']Industria (Italy) 1961, v. 43, no. 12, p. 1394-1397.

DESCRIPTORS: *Ethylenes, *Propenes, *Polymers, Copolymerization, Chlorination, Dehydrogenation, Vulcanization, Vulcanizates, Physical properties.

Eidus, Ya. T. and Zelinskii, N. D.
CARBIDE FORMATION AS AN INTERMEDIATE STAGE OF CATALYTIC SYNTHESIS OF HYDROCARBONS FROM WATER GAS. [1962] 7p. 13 refs.
Order from OTS or SLA $1.10 62-14616

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1942 [no. 4] p. 190-194.

DESCRIPTORS: *Carbides, Production, *Hydrocarbons, *Gasoline, Synthesis, *Hydrogen, *Carbon compounds, *Monoxides, Chemical reactions, Cobalt, Thorium compounds, Dioxides, Catalysts, Catalysis.

It was established that carbides formed under the action of carbon monoxide on the cobalt-thorium dioxide-kieselguhr (from Kisatibi, Georgia) catalyst composed in the proportion of 100:18:100 constitute neither intermediate products nor catalysts promoting the formation of gasoline from carbon monoxide and hydrogen. The hypothesis of intermediate formation of methylene radicals in this catalysis was experimentally verified. (Author)

Gol'dfarb, Ya. L. and Godovikova, S. N.
THE PROBLEM OF THE STRUCTURE OF THE AMIDATION PRODUCTS OF NICOTINE. [1962] 6p.
Order from K-H $7.50 K-H 11411-b

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961 [no. 2] p. 360-363.

DESCRIPTORS: *Atomic structure, *Amides, *Nicotine.

Gössl, Therese.
INFRARED SPECTROPHOTOMETRIC INVESTIGATIONS OF COPOLYMERS OF ETHYLENE AND PROPYLENE. [1962] [16]p. 7 refs.
Order from SLA $1.60 62-14304

Trans. of Makromol[ekulare] Chem[ie] (Switzerland) 1960, v. 42, no. 1, p. 1-11.
Another trans. is available from ATS $9.95 as ATS-38N53G [1961] 8p.

DESCRIPTORS: *Ethylenes, *Propenes, Infrared spectroscopy, Copolymerization.

Kawabe, H., Tsuboyama, S., and Yanagida, M.
A STUDY ON RATE OF ADSORPTION OF NICOTINE BY CATION EXCHANGE RESINS. Feb 61, 9p.
Order from K-H $11.25 K-H 10607-c

Trans. of Rikagaku Kenkyujo Hokoku (Japan) 1959, v. 35, no. 6, p. 426-428.

DESCRIPTORS: *Nicotine, Adsorbents, *Ion exchange resins.

Kofman, L. S. and Vinogradova, V. S.
METHOD OF GRANULATING POWDERED SYNTHETIC ZEOLITES. [1962] 2p.
Order from ATS $5.00 ATS-90P59R

Trans. of Russian patent 135, 078, filing date 19 May 60.

DESCRIPTORS: *Organolites.

Kolesnikov, G. S., Radionova, E. F. and others.
CARBON-CHAIN POLYMERS AND COPOLYMERS. XXVII. POLYMERIZATION AND COPOLYMERIZATION OF DI-n-BUTYL VINYLPHOSPHONATE. [1962] 6p.
Order from ATS $9.60 ATS-40P60R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1960, v. 2, no. 9, p. 1432-1437.
Another trans. is available from OTS or SLA $1.10 as 61-20643 [1961] [8]p.

DESCRIPTORS: Polymerization, *Copolymerization, Condensation reactions, Polymers, Cyclic compounds, Chlorine compounds, *Phosphinic acids, *Styrenes, *Vinyl radicals, *Chlorides, *Acetates, Thermochemistry, Mechanical properties, Esters, Butyl radicals.

For abstract see Technical Translations 7: 258, 1962.
See also 61-20643

Kostrikin, Yu. M.
EFFECTIVENESS OF OXYGEN REMOVAL BY HYDRAZINE. [1962] 7p.
Order from ATS $8.25 ATS-03P61R

Trans. of Teploenergetika (USSR) 1957, v. 4, no. 11, p. 70-73.

DESCRIPTORS: *Hydrazines, Oxygen, Disposal.

Moiseev, V. D. and Neiman, M. B.
MOLECULAR WEIGHT, NUMBER OF DOUBLE BONDS AND THE MECHANISM OF THERMAL DEGRADATION OF VINYL POLYMERS. [1962] 9p.
3 refs.
Order from CTS(Chem) $9.00 CTS(Chem)-261
subsequent copies $1.50

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 9, p. 1383-1388.

DESCRIPTORS: *Polymers, *Vinyl radicals, Molecular weight, Chemical bonds, Deterioration, Temperature, Molecules, Atoms, Molecular isomerism.

Moraglio, Giovanni and Gianotti, Giuseppe.
VISCOSIMETRIC AND CONFIGURATIONAL PROPERTIES OF ATACTIC POLYBUTYLENE. [1962] 7p.
5 refs.
Order from CTS(Chem) $6.40 CTS(Chem)-264
subsequent copies $1.10/ea.

Trans of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fis[iche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1959, ser, 8, v. 27, p. 274-280

DESCRIPTORS: *Polymers, *Butylene, Viscosity, Viscosimeters, Configuration, Molecular weight, Organic solvents

Natta, G., Corradini, P., and Bassi, I. W.
THE CRYSTALLINE STRUCTURE OF ISOTACTIC 1, 2-POLYBUTADIENE. [1962] 7p.
Order from ATS $6.95 ATS-03P60I

Trans. of Accad[emia] Naz[ionale dei] Lincei. Classe [di] Sci[enze] Fis[iche] Mat[ematiche] e Nat[urali. Rendiconti] (Italy) 1957 [ser. 8] v. 23, no. 6, p. 363-370.

DESCRIPTORS: *Polymers, *Butadienes, Crystal structure.

Natta, Giulio, Porri, Lido and others.
HYDROGENATION OF ISOTACTIC 1, 2- AND SYNDIOTACTIC 1, 2-CRYSTALLINE POLYBUTADIENE. [1962] 10p. 16 refs.
Order from CTS(Chem) $10.40 CTS(Chem)-263
subsequent copies $1.75/ea.

Trans. of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fis[iche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1960, v. 28, ser. 8, p. 452-460.

DESCRIPTORS: *Polymers, *Butadienes, Hydrogenation, Crystal structure, Infrared spectroscopy.

Natta, Giulio, Pasquon, Italo and others.
LINEAR HIGH POLYMERS OF PROPYLENE HAVING A SYNDIOTACTIC STRUCTURE. [1962] 5p. 8 refs.
Order from CTS (Chem) $6.80 CTS(Chem)-258
subsequent copies $1.15/ea.

Trans. of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fis[iche] Mat[ematiche] e Nat[urali]. Rend[iconti] (Italy) 1960, v. 28, ser. 8, p. 539-544.

DESCRIPTORS: *Polymers, *Propenes, Fractionation, Separation, Crystal structure, Atoms, Molecules.

Ogloblin, K. A. and Potekhin, A. A.
REACTION OF NITROSYL CHLORIDE WITH 1, 5-HEXADIENE AND 1, 3-BUTADIENE. [1962] 2p.
Order from ATS $3.00 ATS-42P60R

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1961, v. 31, no. 7, p. 2438-2439.

DESCRIPTORS: *Nitrogen compounds, *Oxychlorides, *Dienes, *Butadienes, Chemical reactions.

Petrov, K. A., Smirnov, V. V., and Emel'yanov, V. I.
ALKYLATION AND ARYLATION OF WHITE PHOSPHORUS. [1962] 4p.
Order from ATS $7.00 ATS-67P60R

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1961, v. 31, no. 9, p. 3027-3030.
Another trans. is available from OTS or SLA $1.10 as 62-10683, 17 Nov 61 [7]p.

DESCRIPTORS: *White phosphorus, Phosphorus compounds, *Chemical reactions, *Alkylation, Toluenes, Chlorides, Phosphines, *Alkyl radicals, *Aryl radicals, Halogens, Synthesis.

Ruegg, R., Gloor, U. and others.
THE TOTAL SYNTHESIS OF SOLANESOL. Jan 61, 11p.
Order from K-H $13.75 K-H 10607-d

Trans. of Helvetica Chimica Acta (Switzerland) 1960, v. 43, no. 214/215, p. 1745-1751.

DESCRIPTORS: *Synthesis, *Alkaloids.

Sforzolini, G. S. and Saldi, G.
FURTHER RESEARCHES ON THE POLYCYCLIC HYDROCARBONS OF CIGARETTE SMOKE. [1962] 4p.
Order from K-H $5.00 K-H-11537-c

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1961, v. 37, p. 769-771.

DESCRIPTORS: *Hydrocarbons, *Tobacco, *Cigarettes, *Smokes.

Tsvetkova, V. I., Firsov, A. P., and Chirkov, N. M.
THE POSSIBILITY OF DETERMINING THE CONSTANTS OF ELEMENTARY ACTS IN CATALYTIC POLYMERIZATION. [1962] 3p.
Order from ATS $5.00 ATS-99P60R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, no. 1, p. 149-151.

DESCRIPTORS: *Polymerization, Catalysts, Catalysis, Reaction kinetics, Determination.

Voitelev, Yu. A. and Katorzhnov, N. D.
INCREASING THE HEAT STABILITY OF POLYAMIDES BY THE INTRODUCTION OF SMALL AMOUNTS OF INORGANIC SUBSTANCES. [1962] 7p.
Order from ATS $12.75 ATS-22P61R

Trans. of Khim[icheskie] Volokna (USSR) 1960, no. 3, p. 3-6.

DESCRIPTORS: *Polymers, *Amides, Stability, Heat tolerance, *Inorganic substances, Thermodynamics.

Weygand, Friedrich and Geiger, Rolf.
N-TRIFLUORACETYL-AMINOACIDS. XV. SEPARATION OF AMINOACIDS THROUGH FRACTIONAL DISTILLATION OF THEIR N-TRIFLUORACETYL-METHYL ESTERS (N-Trifluoracetyl-aminosaeuren. XV. Irennung von Aminosaeuren durch Fraktionierte Destillation ihrer N-Trifluoracetyl-aethylaster) tr. by Tatiana Boldyreff. 30 Mar 60, 17p. (refs. omitted)
Order from OTS or SLA $1.60 60-15728

Trans. of Chem[ische] Ber[ichte] (West Germany) 1959, v. 92, no. 9, p. 2099-2106.

DESCRIPTORS: *Aminoacids, Separation, Fractionation, Distilling plants, *Methyl radicals, *Acetyl radicals, *Fluorides, Esters.

Zakharkin, L. I., Okhlobystin, O. Yu., and Strunin, B. N.
ORGANO-MAGNESIUM SYNTHESIS OF HETEROORGANIC COMPOUNDS IN AN ETHER-FREE MEDIUM. [1962] 2p.
Order from ATS $2.00 ATS-98P61R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 12, p. 2254-2255.

DESCRIPTORS: Metalorganic compounds, *Organic compounds, *Magnesium compounds, *Heterocyclic compounds, Synthesis, Ethers.

Physical Chemistry

Adel'son, S. V. and Zaitova, A. Ya.
BASIC RELATIONSHIPS IN THE OXIDATION OF COKE ON THE SURFACE OF SILICA-ALUMINA BEAD CATALYSTS. [1962] 9p.
Order from ATS $13.25 ATS-07P61R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 1, p. 25-31.

DESCRIPTORS: *Coke, Oxidation, *Alumina-silica catalysts, Catalysts, Catalysis, Surface properties.

Asanov, U. A. and Shishakov, N. A.
THE MECHANISM OF THE REACTION OF PLATINUM WITH OXYGEN AT TEMPERATURES UP TO 300°C (O Mekhanizme Vzaimodeistviya Platiny s Kislorodom pri Temperaturakh do 300°). May 61 [12]p. (foreign text included) 14 refs. NLL M 3392.
Order from OTS or SLA $1.60 62-23883

Trans. of #Akad[emiya] Nuak SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 2, p. 225-229.

DESCRIPTORS: *Platinum, *Oxygen, Temperature, Chemical reactions, Crystals.

The products of interaction between platinum and oxygen at moderate temperatures consist of various platinum oxides. Even on a clean platinum surface, chemisorption of oxygen takes place without its molecules being broken up into atoms. During the formation of a peroxide film, marked changes take place in the structure of the surface of the metal itself, and are reflected in particular in a change in the orientation of its crystals. (Author)

Azatyan, V. V., Akopyan, L. A., and Nalbandyan, A. B.
DETECTION OF ATOMIC HYDROGEN IN THE RAREFIED FLAME OF A MOIST CO-O_2 MIXTURE, USING THE EPR METHOD, tr. by B. W. Kuvshinoff. 24 Apr 62, 3p. 9 refs. APL/JHU TG 230-T289.
Order from OTS $0.50 62-11680

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 6, p. 940-941.

DESCRIPTORS: *Flames, Carbon compounds, Monoxides, Dioxides, Mixtures, Moisture, *Hydrogen, *Atoms, Detection, *Paramagnetic resonance, Resonance, Temperature, Pressure, Spectrographic analysis.

In a rarefied flame of a moist mixture of $2CO + O_2$ large concentrations of hydrogen atoms were found, exceeding by tens of thousands of times the equilibrium concentrations corresponding to the conditions of the flame. At 18 mm of He and 627° to 665°, the hydrogen increases from 2.5×10^{13} to 3.5×10^{14} particles/cm^3 (partial pressure from 2.2×10^{-3} to 3.3×10^{-2} mm Hg) for a stoichiometric mixture containing 2.7% water vapor and a flow rate of 6 to 10 cm^3/min (linear velocity 0.5 to 1 m/sec). At 660° and an increase in pressure from 6 to 16 mm Hg, the concentration of hydrogen atoms first increases, then drops sharply. The dependence of H on pressure results from the change in the linear velocity of the flow. Within certain (unspecified) limits the concentration of atomic hydrogen increases with increased content of water vapor in the mixture. The hydroxyl concentration was calculated as 7.4×10^{11} particles/cm^3 at 627°. (See also 62-11081)

Beolpol'skii, M. S.
CHANGE IN STRUCTURE OF COLLOIDAL CAPILLARY POROUS MATERIAL (CLAY) DURING DRYING PROCESS. 13 Feb 62, 9p. (3 figs. omitted) 13 refs.
Order from OTS or SLA $1.10 62-14229

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 4, p. 49-54.

DESCRIPTORS: *Porous materials, *Clays, *Dehydration, Moisture, Deformation, Mechanical properties, *Colloids, Microstructure.

The paper analyzes changes in the structure of clay during the drying process on the basis of structural-mechanical, shrinkage, and desorption properties. We determined the connection between critical points on shrinkage curves, curves of drying rate, and curves of desorption and the critical points of structural changes. (Author)

Bianchi, G.
RESEARCH ON THE STRUCTURE OF CATHODIC PLATINUM BLACK DEPOSITS. [1962] 10p.
Order from ATS $11.95 ATS-45P611

Trans. of Ann[ali di] Chim[ica] (Italy) 1950, v. 40, p. 222-233.

DESCRIPTORS: *Cathodes, *Platinum, Deposits, Electrodeposition.

Blanchard, R., Bochirol, L. and others.
THE DEPOSITION OF PYROLYTIC CARBON FROM METHANE IN THE PORES OF SYNTHETIC GRAPHITE: THE INFLUENCE OF TEMPERATURE. [1962] 2p.
Order from ATS $3.75 ATS-25P60F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1961, v. 252, no. 25, p. 3989-3991 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Methanes, *Carbon, Pyrolysis, Electrodeposition, *Graphite, Porous materials, Temperature.

Burchard, W. and Husemann, E.
A COMPARATIVE STRUCTURAL ANALYSIS OF CELLULOSE AND AMYLOSE TRICARBANILATES IN SOLUTION (Eine Vergleichende Strukturanalyse von Celluloseund Amylose-Tricarbanilaten in Lösung) tr. by D. A. Sinclair. 1961, 37p. 33 refs. NRCC Technical Trans. 995.
Order from NRCC $2.00 NRCC C-3880

Trans. of Makromol[ekulare] Chem[ie] (Switzerland) 1961, v. 44/46, p. 358-387.

DESCRIPTORS: *Cellulose chemistry, Chemistry, *Cellulose, *Saccharides, Starches, *Carbamates, Molecular structure, Viscosity, Molecular weight, Light, Scattering, Optics, Fractionation, Acetones, Solutions.

Delimarskii, Yu. K.
CAUSES DU DÉPLACEMENT DES MÉTAUX DANS UNE SÉRIE DE POTENTIELS DANS LES ÉLECTROLYTES FONDUS [O Prichinakh Perereshcheniya Metallov v Ryadu Napryazhenii v Rasplavlennykh Elektrolitakh] [On Reasons for the Displacement of Metals in the Electrochemical Series in Melted Electrolytes] tr. by M. Giuliani. 28 Dec 61 [14]p. 30 refs. CEA Trans. no. R 1454 (text in French).
Order from OTS or SLA $1.60 62-24587

Trans. in French of #Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1958, v. 28, no. 4, p. 1112-1117.

DESCRIPTORS: Chemical properties, *Metals, *Displacement reactions, *Electrochemistry, Electrolytes, Melting electrolytes.

Eremenko, V. N. and Naiditch, Yu. V.
LA CONDUCTIBILITÉ ELECTRIQUE DES OXYDES ET LEUR APTITUDE AU MOUILLAGE PAR DES METAUX LIQUIDES (O Elektroprovodnosti Okislov i Ikh Smachivaemosti Zhidkimi Metallami) [Electric Conductivity of Oxides and Their Wetting by Liquid Metals] tr. by Tardif. 28 Dec 61 [20]p. 8 refs. CEA Trans. no. R 1453 (text in French).
Order from OTS or SLA $1.60 62-23498

Trans. in French of Ukrain[skii] Khim[icheskii] Zh[urnal] (USSR) 1957, v. 23, no. 5, p. 573-578.

DESCRIPTORS: *Electrical conductance, *Oxides, Wetting agents, *Liquid metals.

Erbring, H. and Lehmann, H.
EXCHANGE REACTIONS ON Na-BENTONITES INVOLVING ORGANIC MACRO COLLOID IONS. [1962] [5]p. 4 refs.
Order from SLA $1.10 62-14784

Trans. of Kolloid-Zeitschrift (Germany) 1944, v. 107 [no. 3] p. 201-205.

DESCRIPTORS: *Exchange reactions, *Sodium, *Bentonite, Colloids, Ions, Electrolytes, Pyridines, Chlorides, Laurates, Sulfates, Ion exchange.

Filippov, Yu. V.
ELECTROSYNTHESIS OF OZONE (Elektrosintez Ozona) tr. by M. Slade. [1962] [74]p. (foreign text included) 53 refs. [CSIRO] Trans. 5517.
Order from OTS or SLA $7.60 62-23716

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1959, v. 14, no. 4, p. 153-186.

DESCRIPTORS: *Ozone, Synthesis, Electric discharges, *Electrochemistry, Chemical reaction, Reaction kinetics.

The principal regularities are explained which determine the external electrical characteristics of discharge in the ozonator. The dependence of the active power on the electrical, physico-chemical and design parameters is resolved by the electrical theory of ozonators. The

purely physico-chemical problem of the kinetic peculiarities of ozone electro-synthesis is solved on the basis of the usual regularities characteric for the kinetics of chemical reactions in a flow. The explanation of the kinetics of ozone synthesis allows a rational approach to a study of the effects of various physico-chemical and design parameters such as temperature, pressure and composition of the original gas, length of reaction zone and size of the discharge gap, method of coupling ozonators, etc. on ozone synthesis. The connection between the electrical and chemical processes in a discharge is accounted for by introducing the principal of proportionality of kinetic constants of the active power of the discharge, and by the effect of the process of ozone production on one of the principal characteristics of the discharge in the ozonator - the amount of potential at the discharge gap in which the discharge takes place. Results obtained make possible not only the calculation of an ozonator with the required performance, but also the selection of the most efficient conditions for its work.

Franck, U. F.
INSTABILITY PHENOMENA IN METALS THAT CAN BECOME PASSIVE. [1962] 12p.
Order from ATS $13.75 ATS-00P60G

Trans. of Z[eitschrift f\"ur] Elektrochem[ie] (West Germany) 1958, v. 62, no. 6/7, p. 649-655.

DESCRIPTORS: *Metals, *Passivity, Electrochemistry.

Gurevich, I. G.
THE MECHANISM OF OPERATION OF GAS DIFFUSION ELECTRODES (APPLIED TO A HYDROGEN-OXYGEN FUEL ELEMENT). [1962] [10]p. 24 refs. C.E. Trans. 2211; NLL M. 4779.
Order from OTS or SLA $1.10 62-24856

Trans. of Inzh[enerno]-Fiz[icheskii] Zhurnal (USSR) 1959 [v. 2] no. 4, p. 78-86.

DESCRIPTORS: *Gas diffusion, Electrodes, *Hydrogen electrodes, *Oxygen electrodes, Operation, *Fuel elements, Electrochemistry.

A mechanism for the operation of a gas diffusion electrode based on the theory of transferring substances in bodies with capillary pores is proposed, which makes it possible to reach an efficient method of constructing electrodes for gaseous fuel elements. The results obtained by Bacon and Justi with hydrogen-oxygen elements are explained. (Author)

Gerischer, H.
PASSIVITY OF METALS. [1962] 28p.
Order from ATS $29.95 ATS-77P60G

Trans. of Angew[andte] Chem[ie] (West Germany) 1958, v. 70, no. 10, p. 285-298.

DESCRIPTORS: *Metals, *Passivity.

Gnusin, N. P.
A MEASURE OF THE CURRENT-DISTRIBUTION THROWING POWER OF ELECTROLYTES (Mera Rasseivayushchei Sposobnosti Elektrolitov Po Toku) May 61 [10]p. (foreign text included) 11 refs. [DSIR] NLL M 3395.
Order from OTS or SLA $1.10 62-23880

Trans. of #Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1961, v. 34, no. 1, p. 220-223.

DESCRIPTORS: *Electrolytes, Electrolysis, Electrochemistry.

On the basis of the theory of similarity it is established that the value of the ratio of the polarisability and resistivity of electrolytes may be employed as an objective measure in the assessment of the current-distribution throwing power of electrolytes. (Author)

Gorokhovatskii, Ya. B. and Rubanik, M. Ya.
ELECTRONIC MECHANISM OF INTERACTION OF OXYGEN AND ETHYLENE WITH SILVER (Elektronnyi Mekhanizm Vzaimodeistviya Kisloroda i Etilena s Serebrom) tr. by J. P. Ruban. [1962] [12]p. (foreign text included) 10 refs. [CSIRO] Trans. 5665.
Order from OTS or SLA $1.60 62-24625

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1960, v. 26, no. 5, p. 594-599.

DESCRIPTORS: Adsorbents, Adsorption, *Oxygen, *Ethylenes, *Silver, Catalysts, Catalysis, Electrochemistry.

By measuring the difference of the contact potential it was found that oxygen when chemically adsorbed by silver attracts silver electrons and becomes negatively charged. Ethylene is chemically adsorbed by silver in the presence of oxygen at temperatures of 20-250^{o}C, and that ethylene transfers its electrons to metal and becomes positively charged. Depending on the strength of chemical sorption of ethylene in the presence of oxygen at temperatures of 20-120^{o}C, gold, silver, and nickel form a series Ag>Ni>Au. (Author)

Graevskii, A. I., Shchegol, Sh. S., and Smolyan, Z. S.
A PHYSICOCHEMICAL STUDY OF SOME SYSTEMS CONTAINING TRIETHYLALUMINUM AND ITS DERIVATIVES. [1962] 3p.
Order from ATS $5.00 ATS-97P59R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 119, no. 1, p. 101-103.
Another trans. is available from CB $5.00.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Ethyl radicals, *Physical chemistry.

Guerreschi, L.
TREATMENT OF ALUMINUM AND OF ITS ALLOYS WITH ALTERNATING CURRENT IN A CHROMIC ANHYDRIDE BATH: FORMATION OF BLACK DEPOSITS (Trattamento con Tensione Alternata dell' Alluminio e delle sue Leghe in Bagno di Anidride Cromica. La Formazione di "Neri di Alluminio"). [1962] [52]p. (foreign text included) 24 refs.
Order from SLA $5.60 62-16108

Trans. of Alluminio (Italy) 1954, v. 23, p. 515-532.

DESCRIPTORS: *Aluminum, *Aluminum alloys, Alternating current, *Chromium compounds, *Anhydrides, Electrochemistry, Coatings, Deposits, Polarization.

When identical surfaces of two perfectly symmetrical aluminum electrodes of identical composition, immersed in an electrolyte consisting of a 3% aqueous solution of chromic anhydride, are polarized with alternating current, one of the resulting electrodes will have a coating with low surface density, poor mechanical resistance and with rectifying properties, and the other will have a coating of high surface density, considerable mechanical resistance, variable color and properties, independently of the macroscopic electrochemical conditions of the treatment. Because of the asymmetry of the coating being formed, a distortion occurs of the negative and positive halfwaves of the alternating current, owing to the rectifying properties of one of the coatings being formed. This distortion is such that, were it not for the initial variations of the electrode surfaces and, hence, of the physical properties of the coatings deposited thereon, it would tend to render more rectifying the electrode with the coating formed at high current efficiency. The lack of balance leading to the deposition of different coatings on two electrodes and to a partial rectification of the current depends on processes which occur on the surface of the electrodes at the instant of their initial polarization with alternating current.

Justi, E.
DIRECT CONVERSION OF CHEMICAL ENERGY INTO ELECTRICAL ENERGY BY MEANS OF FUEL CELLS. [1962] 8p. (refs. 4 figs. omitted).
Order from SLA $1 10 62-14798

Trans. of [die] Naturwissenchaften (Germany) 1961, v 48, no. 16, p. 543-545.

DESCRIPTORS: *Fuel cells, *Energy, Electrochemistry, Reaction kinetics, Electronic equipment, Hydrogen electrodes, Electrolytes.

A survey.

Karpacheva, S. M., Rodionov, E. P., and Popova, G. M.
COMPARING THE EFFECTIVENESS OF EXTRACTION BY MEANS OF PULSE PACKED COLUMNS WITH CONTINUOUS AQUEOUS AND ORGANIC PHASES. [1961] 9p. 8 refs.
Order from OTS or SLA $1.10 62-10983

Trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 6, p. 496-499.

DESCRIPTORS: *Solvent extraction, *Towers (Chemistry), Water, Solutions, Organic compounds, Phosphates, Butyl radicals, Uranyl radicals, Nitrates, Hydrocarbons, Phase studies, Chemical equilibrium, Mass transfer, Effectiveness.

The effect of continuous organic and water phase on the work of pulse packed extraction column, 25mm in diameter, was investigated. The selection of the phase for dispersion has almost no effect whatever on the value of the maximum load of the column and the efficiency of mass transfer during the extraction and reextraction processes with solutions of low concentrations, if $n=1$. If $n=4$, the efficiency of the mass transfer during extraction, is somewhat reduced when the water phase is dispersed. An approximate evaluation of the minimum time when the dispersed phase remains on the plate, necessary for reaching the equilibrium, is given.

Kasatkin, A. G., Kagan, S. Z., and Trukhanov, V. G.
EMPIRICAL EQUATIONS OF EQUILIBRIUM DISTRIBUTION FOR A LIQUID-LIQUID SYSTEM. [1962] [14]p. 13 refs.
Order from OTS or SLA $1.60 62-10969

Trans. of Khimicheskaya Promyshlennost' (USSR) 1960, no. 6 [p. 488-492].

DESCRIPTORS: *Liquids, *Chemical equilibrium, Equations, Phase studies, *Solvent extraction, Organic solvents.

Lubarskii, G. D. and Kagan, M. Ya.
VANADIUM OXIDES USED AS HYDROGENATION AND DEHYDROGENATION CATALYSTS. [1962] [2]p.
Order from OTS or SLA $1.10 62-14636

Trans. of Akademiya Nauk SSSR. Doklady, 1940, v. 29, no. 8/9, p. 575-576.

DESCRIPTORS: Hydrogenation, Dehydrogenation, *Catalysts, *Vanadium compounds, *Oxides, Catalysis, Butanes, Butenes, Benzenes, Ethyl radicals, Styrenes.

Mar'yasin, I. L. and Tesner, P. A.
KINETICS OF THE GROWTH OF A CARBON SURFACE DURING THE THERMAL DECOMPOSITION OF METHANE IN THE TEMPERATURE RANGE OF 1400-1700° C. [1962] 5p.
Order from ATS $8.00 ATS-73P59R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, no. 5, p. 1121-1124.

DESCRIPTORS: *Methanes, *Pyrolysis, Decomposition, Temperature, *Carbon, Surfaces, Growth, Kinetic theory.

Merzhanov, A. G.
QUASI-STEADY STATE THEORY OF THERMAL EXPLOSION. [1962] 5p.
Order from ATS $8.45 ATS-88P60R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, no. 3, p. 637-640.

DESCRIPTORS: Heat, *Explosions, Theory.

Minc, S. and Jasielski, J.
THE MECHANISM OF CATHODIC DEPOLARIZATION IN NITRIC ACID. [1962] 11p.
Order from ATS $15.95 ATS-21P59P

Trans. of Roczniki Chem[ii] (Poland) 1954, v. 28, p. 109-123.

DESCRIPTORS: *Nitric acid, Electrochemistry.

Nagase [K.] and Sakaguchi [K.].
ADDITION REACTION OF ETHYLENE OXIDE TO LAURIC ACID. [1962] [18]p. 14 refs.
Order from SLA $1.60 62-14288

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64 [no. 6] p. 1035-1040.

DESCRIPTORS: *Ethylene oxide, Additives, Chemical reactions, *Fatty acids, Catalysts, Laurates.

Sodium metal was used as the catalyst in the reaction of ethylene oxide at atmospheric pressure by the bubbling method, and under pressure in measuring the rate of addition. The product analyses were done after extracting the product with ether and determining the acid value, saponification value and hydroxyl value of the extract. In both cases the addition curve shows an inflection point when the average number of moles, v, of ethylene oxide is one. But the products show different compositions depending on the reaction conditions. In the case of bubbling at atmospheric pressure, ethylene glycol monolaurate undergoes transesterification with the unreacted lauric acid to generate water when $v<1$. In any of the reaction methods used and as long as $v<1$, ethylene glycol monolaurate forms ethylene glycol dilaurate and ethylene glycol by a transesterification reaction. When $v=1$, the composition of the product changes considerably. When $v>1$, ethylene oxide adds to the monoester and the glycol with a constant transesterification reaction taking place as shown.

$$C_{11}H_{23}COO(CH_2CH_2O)_vCOC_{11}H_{23} + HO(CH_2CH_2O)_vH \rightleftharpoons C_{11}H_{23}COO(CH_2CH_2O)_vH$$

The product has a large K value close to 4, where the equilibrium constant, $K = \frac{[\text{monester}]^2}{[\text{diester}][\text{glycol}]}$. (Author)

Neiman, M. B. and Buchachenko, A. L.
INVESTIGATION OF THE STRUCTURE AND REACTIVITY OF SOME STABLE RADICALS. [1962] 8p.
Order from ATS $9.25 ATS-82P60R

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 10, p. 1742-1748.

DESCRIPTORS: *Molecular structure, *Chemical reactions.

Palatnik, L. S. and Kopeliovich, I. M.
TOPOANALYTICAL INVESTIGATION OF EQUILIBRIUM DIAGRAMS OF MULTICOMPONENT EUTECTIC SYSTEMS, PT. 2. [1962] 8p.
Order from ATS $10.25 ATS-21P60R

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1957, v. 31, no. 5, p. 952-959.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 in 60-17712, TVA-3710, 12 Apr 58 [22]p.

DESCRIPTORS: *Eutectics, *Chemical equilibrium, Topology, Mathematical analysis.

For abstract see Technical Translations 4: 145, 1960.

Petrova, Yu. S.
MECHANICAL PROPERTIES OF ELECTROLYTIC DEPOSITS. May 62, 108p.
Order from CB $12.50

Trans. of mono. [Fiziko-Mekhanicheskie Svoistva Elektroliticheskikh Osadkov, Moscow, 1960, 205p.].

DESCRIPTORS: *Electrodeposition, *Electroplating, *Metals, Plating, Mechanical properties, Electrochemistry.

Raizer, Yu. P.
THE FORMATION OF NITROGEN OXIDES IN THE SHOCK WAVE OF A STRONG EXPLOSION IN AIR. [1962] 22p. 11 refs.
Order from OTS or SLA $2.60 62-16023

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1959, v. 33 [no. 3] p. 700-709.
Another trans. is available from OTS $0.50 as 60-11839, JPRS-2956, 30 June 60 [17]p.

DESCRIPTORS: Air, *Explosions, *Shock waves, *Nitrogen compounds, *Oxides, Production, Reaction kinetics, Oxidation, Hydrodynamics, Temperature, Chemical equilibrium.

For abstract see Technical Translations 4: 318, 1960.

Skidanova, N. I., Gundyrev, A. A., and Chenozhukov, N. I.
FURFURAL SOLUBILITY OF AROMATIC HYDROCARBONS SEPARATED FROM LUBRICATING OIL FRACTIONS OF KOTUR-TEPE CRUDE. [1962] 8p.
Order from ATS $9.50 ATS-35P61R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 2, p. 59-62.

DESCRIPTORS: *Petroleum, *Lubrication, *Oils, Fractionation, *Hydrocarbons, Separation, Solubility, *Furfurals, Organic solvents.

Smirnov, M. V. and Ivanovskii, L. E.
CATHODIC PROCESSES IN THE DEPOSITION OF BERYLLIUM FROM FUSED ELECTROLYTES (Katodnye Protsessy pri Osazhdenii Berilliya iz Rasplavlennykh Elektrolitov). [1961] 9p. (foreign text included) 11 refs.
Order from OTS or SLA $1.60 AEC-tr-4416

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1958, v. 32, no. 9, p. 2174-2182.

DESCRIPTORS: *Beryllium, *Cathodes (Electrolytic cell), *Electrolytes, Electrochemistry, Ions, Alkali metals, *Electrodeposition.

A study was made of the polarization of the molybdenum cathode at 400, 500 and 600° C in a molten eutectic of lithium and potassium chlorides containing 0.1, 1.9 and 7.25% by weight $BeCl_2$ or 3.9% by weight K_2BeF_4, the current densities ranging from 10^{-3} to 3 A/cm^2. It has been found that at relatively low densities (below 10^{-3}A/cm^2) mainly the reduction of Li^+ and K^+ ions to the Li^{2+} and K^{2+} subions takes place, the cathodic potential changing in conformity with the law of concentration polarization. The deposition potential of metallic beryllium, depending upon the concentration of its ions in the melt and the temperature, is by 1.2—1.4V more positive than the deposition potential of the alkaline metals. The true current density increases slower during the deposition process than the electrolysis current, owing to which limiting diffusion currents of Be^{++} ionic discharge are attained at high apparent current densities referred to the geometrical surface of the molybdenum cathode. The introduction of fluorine ions in the melt in amounts equivalent to K_2BeF_4 considerably increases the deposition potential of metallic beryllium on the cathode and lowers the limiting diffusion current of discharge of its ions, but has no significant effect on the overcharge of the alkaline metals at low current densities (in the region of residual current) nor on their deposition potential at high current densities. (Author)

Tomilov, A. P.
ANODIC SUBSTITUTION REACTIONS. [1962] 33p.
Order from ATS $26.45 ATS-19P60R

Trans. of #Uspekhi Khim[ii] (USSR) 1961, v. 30, no. 12, p. 1462-1489.

DESCRIPTORS: *Anodes (Electrolytic cell), *Substitution reactions.

Veselovskii, V. I.
PHOTOELECTROCHEMICAL PROCESSES ON IRON IN THE PRESENCE OF HYDROGEN PEROXIDE (Fotoelektrokhimicheskie Protsessy na Zheleze v Prisutsvii Perekisi Vodoroda). [1962] [21]p. (foreign text included) 7 refs.
Order from OTS or SLA $2.60 62-16087

Partial trans. (excerpts) of Zhurnal Fizicheskoi Khimii (USSR) 1949, v. 23, no. 9, p. 1095-1105.

DESCRIPTORS: *Iron, *Hydrogen compounds, *Peroxides, Radiation effects, Electrochemistry, Photochemistry.

For abstract of original article see Chem. Abstracts 44: 929b, 1950.

Yamamoto, Magobei.
PEPTIZATION OF ALUMINUM SOAP GELS. II. INFRARED SPECTROSCOPIC STUDIES, tr. by E. R. Hope. Feb 62, 6p. 3 refs. DSIS T 72 J.
Order from NRCC NRCC C-3920

Trans. of Yakugaku Zasshi (Japan) 1960, v. 80, no. 11, p. 1530-1533.

DESCRIPTORS: *Infrared spectroscopy, *Aluminum compounds, *Aluminum soaps, *Gels, Absorption spectra, *Stearates.

Yurzhenko, A. I., Ivanchev, S. S., and Galibei, V. I.
THERMAL STABILITY AND INITIATING ACTIVITY OF DIACYL PEROXIDES OF PARAFFINIC AND PHENYL-CARBOXYLIC ACIDS. [1952] 5p.
Order from ATS $8.00 ATS-12P59R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, no. 6, p. 1348-1351.

DESCRIPTORS: *Carboxylic acids, Acids, *Phenyl radicals, Hydrocarbons, *Peroxides, *Acyl radicals, Stability, Heat tolerance, Thermochemistry.

EARTH SCIENCES

SOVIET ANTARCTIC EXPEDITION: SELECTED SOVIET WORKS. 19 June 61 [78]p. 16 refs. JPRS:9472.
Order from OTS or SLA $7.60 61-23589

Trans. of Sovetskaya Antarkticheskaya Ekspeditsiya, 1955- (USSR) 1959, v. 2, p. 115-156.

DESCRIPTORS: *Magnetic fields, Diurnal variations, Earth, *Electric currents, Electromagnetic fields, *Earthquakes, Seismographs, Seismological stations, *Antarctic regions, Geophysics.

Contents:
Magnetic field in the Mirnyi area, by P. K. Sen'ko
Investigations of earth currents in the Mirnyi area, by P. K. Sen'ko and V. A. Troitskaya
Seismological observations in Mirnyi, by A. D. Sytinskii.

Anisimov, M. I.
AN APPROXIMATE EVALUATION OF FORMULAS ON THERMAL CONDUCTIVITY OF SNOW (Priblizhennaya Otsenka Formul Teploprovodnosti Snega) tr. by Irene A. Donehoo. Apr 62, 4p.
Order from OTS $0.50 62-11667

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 9, p. 34-36.

DESCRIPTORS: *Snow, *Thermal conductivity, Density, Heat transfer, Ice, Particles, Physical properties, Numerical analysis, Phase transitions.

The method presented shows graphically the shortcomings of some of the formulas although it does not permit one to select the best formula. (Author)

Gamburtsev, G. A. and Berzon, I. S.
HIGH-FREQUENCY SEISMIC SURVEYING. [1962] 9p. 7 refs.
Order from OTS or SLA $1.10 62-14581

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 101 [no. 5] p. 841-844.

DESCRIPTORS: *High frequency, *Seismic waves, *Geophysical prospecting, Resolution.

Gmid, L. P.
ON EXPERIMENT OF THE STUDY OF FRAGMENTAL QUARTZ IN THE SAND-SILSTONIC ROCKS OF CHOKRAK IN NORTH-EASTERN CAUCASUS. [1962] [8]p. 3 refs.
Order from OTS or SLA $1.10 62-14629

Trans. of [Akademiya Nauk SSSR]. Doklady, 1952, v. 86, no. 2, p. 393-396.

DESCRIPTORS: Minerals, *Quartz, Experimental data, Geology, Geophysics, Sand, Rock, Quantitative analysis, Fragmentation, Mountains.

Hurtig, Theodor.
THE GREAT 1958 LANDSLIDE ON THE CHALK CLIFF NORTH OF SASSNITZ RUEGEN. 12 Feb 62 [19]p. JPRS: 12488.
Order from OTS or SLA $1.60 62-19796

Partial trans. (some parts summarized) of Geographische Berichte (East Germany) 1961, v. 6, no. 18, p. 1-9.

DESCRIPTORS: *Avalanches, Beaches, Sea water, Erosion, *Terrain, Analysis, Photography.

Krasovskii, V. I., Shklovskii, I. S. and others.
THE DETECTION IN THE UPPER ATMOSPHERE OF ELECTRONS WITH ENERGIES ABOUT 10 KEV, WITH THE AID OF SPUTNIK III (Obnaruzhenie v Verkhnei Atmosfere s Pomoshch'yu Tret'ego Sputnika Elektronov s Energiei Okolo 10 Kev). [1962] [10]p. (foreign text included) 17 refs.
Order from OTS or SLA $1.10 62-16025

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 127, no. 1, p. 78-81.
Other translations are available from OTS $0.50 as 60-21182, NRL Trans-774, Dec 59, 7p. and $0.50 as 60-21758, NASA TT-F-39, June 60, 7p.; from CTS (Chem) $5.00 as CTS (Chem)-105 [1960] 1600 words; and from AGI $8.00 in v. 127, nos. 1-6; earth sciences sections.

DESCRIPTORS: *Electrons, Detection, *Upper atmosphere, Electromagnetic properties, Satellite vehicles.

Mansurov, S. M.
SOME SCIENTIFIC RESULTS OF THE WORK OF THE GEOPHYSICAL PARTY, SOVIET ANTARCTIC EXPEDITION, tr. by E. R. Hope. May 61, 4p.
DSIS T 353 R.
Order from NRCC mi$1.00, ph$1.50 NRCC C-3673

Trans. of [Sovetskaya Antarkticheskaya Ekspeditsiya, 1955-] (USSR) 1960, v. 9, p. 6-9.

DESCRIPTORS: *Geophysics, *Antarctic regions, Terrestrial magnetism, Magnetism, Aurorae, Ionosphere, Earth, Electric currents, Cosmic rays, Earthquakes.

Rast, Nicholas, ed.
APPLIED GEOPHYSICS, USSR: A COMPENDIUM OF RECENT RUSSIAN PAPERS. [1962] approx. 320p.
Order from PP approx. $15.00

DESCRIPTORS: Literature, *Geophysics, Geophysical prospecting, Rock, Wave characteristics, Refraction, Reflection, Gravity, Measurement, Well logging, Instrumentation, Particle accelerators.

Climatology and Meteorology

SOVIET AEROLOGICAL STUDIES. 7 June 62 [38]p. 42 refs. JPRS: 14039.
Order from OTS or SLA $3.60 62-25052

Trans. of Tsentral'nyi Institut Prognozov. Trudy (USSR) 1961, v. 110, p. 32-50 and 70-76.

DESCRIPTORS: *Weather forecasting, *Wind, Velocity, Atmosphere, Numerical analysis, *Cyclones, Motion, Pressure, *Anticyclones, Meteorological data.

Contents:
A system for numerically forecasting the wind and the geopotential in the lower half of the troposphere, by A. I. Burtsev
Calculation of cyclonic movement by initial pressure and wind fields, by A. I. Burtsev and N. G. Leonov
Horizontal wind divergence and its role in the variation of intensities of surface cyclones and anticyclones, by O. V. Gaevskaya.

SWEDEN'S METEOROLOGICAL AND HYDROLOGICAL INSTITUTE, ANNUAL REPT., 1960: [SELECTED PARTS]. 13 Nov 61 [62]p. JPRS: 11028.
Order from OTS or SLA $6.60 62-19500

Trans. of mono. Sveriges Meteorologiska och Hydrologiska Institut, Stockholm, 1960, p. 1-23 and 35-37.

DESCRIPTORS: *Meteorology, *Hydrology, Sweden, Weather forecasting, Maps, Water supplies, Precipitation, Snow, Ice, Drainage, Control.

Belov, P. N.
NUMERICAL PREDICTION OF THE PRESSURE FIELD BY A THREE LEVEL ATMOSPHERIC MODEL (Chislennyi Prognoz Baricheskogo Polya po Trekhurovennoi Modeli Atmosfery) tr. by H. K. Gold. May 62, 14p. 12 refs.

Order from OTS $0.50 62-11683

Trans. of Tsentral'nyi Institut Prognozov. Trudy (USSR) 1961, v. 111, p. 29-38.

DESCRIPTORS: *Atmosphere models, Pressure, Computers, Weather forecasting, *Air mass analysis, Statistical functions, *Barometric pressure, Temperature, Stratification.

One of the possible variants of the solution of the problem of the numerical forecast of pressure at various atmospheric levels is proposed, using an electronic computer. This version is distinguished from the existing hydrodynamic methods of forecasting in a baroclinic atmosphere by the simultaneous computation of surface friction and temperature stratification. In addition, a new method is proposed for the calculation of the transport of eddy velocity and temperature. (Author)

Berlyand, M. E.
FORECASTING AND REGULATING THE HEAT REGIME OF THE SURFACE LAYER OF THE ATMOSPHERE: [SELECTED PARTS] tr. by Robert Sholiton. Nov 61 [16]p. AmMetSoc-M-R-TC-38.
Order from OTS or SLA $1.60 62-23352

Partial trans. of mono. Predskazanie i Regulirovanie Teplovogo Rezhima Prizemnogo Sloya Atmosfery, Leningrad, 1956, 435p.

DESCRIPTORS: *Atmosphere, Temperature, Thermal radiation, *Heat transfer, *Meteorological data, Air mass analysis, Moisture, Evaporation, Agriculture, Abstracting.

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Borisov, A. V.
THE SIBERIAN SMOKE HAZE OF 1959. 25 June 62 [5]p. JPRS: 14250.
Order from OTS or SLA $1.10 62-25500

Trans. of Priroda (USSR) 1961 [v. 50] no. 5, p. 65-66.

DESCRIPTORS: Meteorology, *Smokes, *Haze, Forest fires, Siberia.

The beginning of the unusual phenomenon, a dry fog (haze), was first recorded by weather stations in Eastern Siberia on the morning of July 14 in the basins of the Lower and Podkamennaya Tunguska Rivers. It spread rapidly and by the 16th had encompassed a part of Tomsk, Novosibirsk and Kemerovo Provinces, reaching south to the Krasnoyarsk-Ust'-Kut line; by the 19th the edge reached from the eastern slopes of the Urals (Chelyabinsk and Sverdlovsk Provinces) to the the western shore of Lake Baykal and the upper reaches of the Lena and Vilyuy Rivers and from the Lower Tunguska River in the north to the northern boundary of the Mongolian People's Republic in the south. The total area covered by the greyish-yellow haze was approximately 3.5 million square kilometers with atmospheric transparency reduced to 10 or 12% of normal. The cause of this unusual phenomenon was forest fires in Krasnoyarsk Territory in July 1959 which had produced an enormous amount of smoke; this smoke had been caught up by rising warm air currents and then carried by air streams to the west.

Burkovskaya, S. N.
THE DISTRIBUTION OF MOISTURE CONTENT IN WARM FRONTAL CLOUDS (O Raspredelenii Vodnosti v Oblakh Teplogo Fronta) tr. by H. K. Gold. Apr 62, 13p. 11 refs.
Order from OTS $0.50 62-11666

Trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1960, no. 28, p. 58-69. Another trans. is available from ATS $15.65 as ATS-00P59R [1962] 12p.

DESCRIPTORS: *Moisture, Distribution, *Clouds, *Air mass analysis, Precipitation.

Data were analyzed of two summers of observations of moisture content at three airplane sounding stations of the Hydrometeorological Service (Riga, Leningrad, Moscow). These stations are located in regions in which fronts are more clearly defined and observed more frequently than in other regions of European Russia. The chief region of maximum moisture content values is distributed along a frontal surface situated not far above it. The presence of a second isolated maximum above the frontal line at the earth's surface is explained by the fact that in a number of cases the cloud system of the warm front may deviate from the classical scheme. Side by side with the nimbostratus clouds there may be observed clouds assuming a primarily cumulonimbus character. Observations show that warm front cumulonimbus clouds are always distributed close to the frontal line of the earth's surface. The regions of motion along the vertical correspond qualitatively to regions of high values of moisture content while areas of downward motion are regions of low moisture content values. The strip of low moisture content values, located in the warm air mass at 100 to 200 km from the frontal line corresponds to the region of descending motion. The maximum amounts of moisture content in the first region are observed at heights of about 1 km above the frontal surface.

Evseev, P. K.
THE APPLICATION OF COMPUTING PROCEDURES IN METEOROLOGY (Ispol'zovanie Shchetnoi Tekhniki v Meteorologii) tr. by Irene A. Donehoo. May 62, 11p.
Order from OTS $0.50 62-11684

Trans. of Met[eorologiya] i Gidr[ologiya] (USSR) 1961, no. 12, p. 6-14.
Another trans. is available from OTS or SLA $1.60 in 62-23808, JPRS-13391, 10 Apr 62 [18]p.

DESCRIPTORS: *Meteorology, *Computers, Cybernetics, Automation, Weather forecasting, Climatic factors.

Koncek, Mikulas.
METEOROLOGY IN CZECHOSLOVAKIA: DEVELOPMENT OF METEOROLOGY IN CZECHOSLOVAKIA SINCE 1945. 26 Jan 61 [13]p. JPRS: 4358.
Order from OTS or SLA $1.60 62-19286

Trans. of Studia Geophysica et Geodaetica (Czechoslovakia) 1960, v. 4, p. 111-118.

DESCRIPTORS: *Meteorology, Climate, Personnel, Training, *Czechoslovakia.

Kupetskii, V. N.
DEEP ATLANTIC WATERS AS A CAUSE OF CERTAIN FEATURES OF THE POLAR CLIMATE (Glubinnye Atlanticheskie Vody Kak Prichina Nekotorykh Osobennostei Polyarnogo Klimata) tr. by Charles E. Townsend. Aug 60 [14]p. 22 refs.
AmMetSoc T-R-319+; AD-253 558.
Order from OTS or SLA $1.60 61-19526

Trans. of Problemy Arktiki (USSR) 1959, no. 6, p. 13-21.

DESCRIPTORS: Atlantic ocean, *Oceanography, Arctic regions, Climate, *Climatic factors, *Geophysics, *Water, Temperature, *Heat, Meteorology.

Climatological data on the polar regions were studied. It was noted that for a multi-annual period, when all chance factors were smoothed out by averaging and the influence of the main factors was felt most sharply, non-nuclear winters occurred chiefly on the Antarctic coast and in certain arctic regions (the northern part of Baffin Bay and in the region of Franz Josef Land). Winters with warm nuclei were observed only in the eastern part of the Kara Sea and in the western part of the Laptev Sea. The question whether this distribution is not a chance one is discussed. (ASTIA abstract)

[Ling, Te-ch'ang].
AN EXPERIMENT IN QUANTITATIVE PREDICTION OF PRECIPITATION (Opyt Kolichestvennogo Prognoza Osadkov) tr. by Irene A. Donehoo. May 62, 6p.
Order from OTS $0.50 62-11682

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 12, p. 23-25.
Another trans. is available from OTS or SLA $1.60 in 62-23808, JPRS-13391, 10 Apr 62 [18]p.

DESCRIPTORS: Meteorology, Weather forecasting, *Precipitation, Mathematical prediction, Wind, Velocity, Humidity, Atmosphere, Boundary layer, Experimental data.

A quantitative calculation of condensed moisture, not only in the free atmosphere but also in the boundary layer, is attempted by taking into consideration the effect of geographical conditions on precipitation. Meteorological observations for 6 and 7 August 1959 were used. During this time precipitation was observed in eastern China. Precipitation also fell in the Baodin (39°00 N; 116° 21E) area but its distribution was not uniform. For a numerical prediction of precipitation, for a small area, the wind speed and specific humidity values at different levels were used. Only the 1000 and 500 mb levels were considered in the calculations. Vertical velocities at different levels were computed and their distribution examined. In calculating vertical currents, the orographic effect were considered.

Mitbreit, B. A. and Gavrilov, V. G.
THE CLIMATE OF CHINA. 20 Apr 62 [412]p. 97 refs.
JPRS: 13529.
Order from OTS or SLA $22.25 62-24259

Trans. of mono. Klimat Kitaya, Moscow, 1961, p. 5-341 (originally written in Chinese by Ch'en Shih-hsun).

DESCRIPTORS: *Climate, *China, Geography, Air, Temperature, Pressure, Atmosphere, Motion, Cyclones, Tropical cyclones, Precipitation, Wind, Velocity, Humidity, Evaporation, Clouds, Sun, Fog, Visibility, Plants, Agriculture, Climatic factors, Meteorology.

The book Climate of China was written by Chinese climatologist Ch'en Shih-hsiung on the basis of a generalization of vast factual-data and also on the basis of the results of research by Chinese climatologists. The author analyzes the climate-forming factors and distribution of the basic meteorological elements on the territory of China, substantiates the climatic division into regions, and characterizes the country's climatic regions established by him. These characterizations accompanied by extensive tabular data, are the most detailed descriptions of China's climatic regions in world literature. The book is of great interest for a wide circle of specialists and students of higher educational institutions, especially for physical geographers, climatologists, meteorologists, hydrologists and agronomists. (Soviet Editorial Board for Literature on the Problems of Geographical Sciences)

Panchev, St.
SPACE CORRELATION OF LOCAL TEMPERATURE CHANGES IN TURBULENT ISOTROPIC STREAMS. 26 Feb 62 [7]p. JPRS: 12680.
Order from OTS or SLA $1.10 62-19773

Trans. of Bulgarska Akademiya na Naukite. Doklady, 1961, v. 14, no. 2, p. 143-145.

DESCRIPTORS: *Temperature, *Turbulent flow, Heat transfer, Statistical functions.

The correlation between local temperature changes and time, and local temperature changes and the respective temperature are analyzed. The results can be applied in solving analogous problems in the field of synoptic meteorology. (Author)

Geodesy

BULLETINS OF THE ACADEMY OF SCIENCES USSR, GEOGRAPHICAL AND GEOPHYSICAL SERIES, 1944, VOL. 8, NO. 5: SELECTED ARTICLES. [1961] [30]p. 12 refs. ACIC LD-45-G.
Order from OTS or SLA $2.60 62-15962

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1944, v. 8, no. 5, p. 281-291 and 295-297.

DESCRIPTORS: Scientific research, *Geography, *Geophysics, *Topology, *Gravity, Ellipsoids, Geodetic data, Geodesics, Geology, Rock, Least squares method, Functions.

Contents:
Experiment of application of the hypothesis of partial isostatic compensation, by D. N. Khramov
Accuracy of determination of gravity anomalies by gravitational variometers, by Yu. D. Bulanzhe
The inverse problem of the gravitational potential for the homogeneous ellipsoid of rotation, by I. S. Gel'fand.

Losev, K. A.
SOME ACTIVITIES OF THE GEODETIC SECTION OF THE KUYBYSHEV BRANCH OF THE ALL-UNION ASTRONOMICAL AND GEODETICAL SOCIETY. 14 June 62 [17]p. JPRS: 14115.
Order from OTS or SLA $1.60 62-25174

Trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten' (USSR) 1960, no. 28(35) p. 51-55.

DESCRIPTORS: *Geodesics, Geophysical prospecting, Aerial photography, Photography, Mapping, Geodetic astronomy, Astronomy.

Przewlocki, Stefan.
CARTOGRAPHIC PROBLEMS OF RADAR IMAGES (Zagadnienia Kartometryczne Obrazow Radarowych). 29 May 61 [11]p. JPRS: 9349.
Order from OTS or SLA $1.60 62-19317

Trans. of Przeglad Geodezyjny (Poland) 1961 [v. 33] no. 1, p. 24-26.

DESCRIPTORS: *Radar, *Mapping, *Radar images, Maps, Radar pulses, Display systems, Geodesics.

Viduev, N. G.
PRINCIPLES OF GEODETIC SURVEYING: SELECTED PARTS. 19 Mar 62 [32]p. JPRS: 13042.
Original copy poor quality, available on loan from OTS or SLA 62-23451

Trans. of mono. Osnovy Geodezicheskikh Razbivochykh Rabot, 2d ed., Kiev, 1960, p. 336-353 and 469-470.

DESCRIPTORS: *Geodesics, *Geophysical prospecting, Roads, Railroads, Oils, Gases, Transportation, Transmission lines, Communication systems, Inland waterways, Terrain, Floods.

Contents:
Tracing of automobile highways and railroads
Tracing of oil pipelines, gas pipelines, electric transmission lines and of underground communications
Tracing of channels
Precision of tracing and surveying works
Transfer of the lines of flooding on the terrain
Table of contents

Geography

Baranov, B. V., Makunina, A. A., and Tkachenko, V. P.
LANDSCAPE MAP OF THE URAL-SAKMARA INTERFLUVIAL REGION AND ITS USE IN PHYSICAL-GEOGRAPHIC REGIONING. 31 Jan 62 [16]p. JPRS: 12204.
Original copy poor quality; available on loan from OTS or SLA 62-15660

Trans. of mono. Teksty Dokladov (Texts of the Reports) Moscow, 1961, p. 107-113.

DESCRIPTORS: *Maps, *Geology, Soils, Rock, Minerals, Plants.

Bulla, Bela.
TEN YEARS OF THE GEOGRAPHIC RESEARCH GROUP OF THE HUNGARIAN ACADEMY OF SCIENCES. 7 June 62 [17]p. JPRS: 14047.
Order from OTS or SLA $1.60 62-25060

Partial trans. (some parts summarized) of Foldrajzi Ertesito (Hungary) 1962, v. 11, no. 1, p. 1-13.

DESCRIPTORS: Scientific research, *Geography, *Economics, *Hungary.

Keher, G. and Menge, W.
REPORT ON THE MEETING OF THE ECONOMIC GEOGRAPHY SECTION OF THE GDR GEOGRAPHIC SOCIETY, 29 SEP-1 OCT 60. 8 Feb 62 [9]p. JPRS: 12388.
Order from OTS or SLA $1.10 62-15957

Trans. of Geographische Berichte (East Germany) 1961, v. 6, no. 18, p. 68.

DESCRIPTORS: Symposia, *Geography, *Economics, *East Germany.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 1, P. 1-126. Jan 62, 1v. 158 refs.
Order from AGI $5.00, $55.00/year

Trans. of Sovetskaya Geologiya (USSR) 1960, no. 9, p. 57-72, 103-121, 128-130, 134-137, 162-165, 197-203; no. 10, p. 24-59, 81-111, 129-132; and Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1959, v. 2, p. 495-502.

DESCRIPTORS: *Geology, Periodicals, Translations, Gold, Ores, Deposits, Petrology, Sea of Japan, Sedimentation, Inland waterways, Dams, Geological time, Siberia, Rock, Salts, Structures, Geological survey, Personnel, Volcanoes, Earthquakes, Gravity Earth, Mountains, Climatic factors, Fracture (Mechanics), Minerals, Boron, Geochemistry, Geophysical prospecting, Exploration, Well logging, Neutrons, Gamma rays.

Contents:
Sovetskaya Geologiya, 1960, nos. 9-10: contents and translation availability
Specific features of geologic structure in the Ergelyakh rare-metal, gold-ore deposit, by F. R. Apel'tsin andA. K. Savel'ev
Typical features of the sedimentation process in the Sea of Japan, by A. V. Solov'ev
Value of the longitudinal cross-section of a river valley in engineering geological planning, by D. P. Prochukhan
Age of some silurian deposits in the Salair Range, West Siberia, by V. A. Zheltonogova and V. G. Zinchenko
Basic features of the kinematics of formation of salt structures in the Dnepr-Donets trough, by V. I. Kityk
Results of 1959 geological exploration and the 1960 schedule for the several republics
The seventieth birthday of academician Iosif Fedorovich Grigor'ev, by M. N. Althausen and others
Specific features of recent tectonism along the Kuril Islands arc, by A. V. Goryachev
Structure-facies and tectonic division of the southern Sikhote-Alin, by B. A. Ivanov
Density characteristics of ancient rocks of the Western Tien-Shan, by V. Ya. Medvedev and P. P. Stepanov
Thermal conditions in the anticlinal zone of Surakhany-Karachukhur-Zykh-Peschanyi (Apsheron Peninsula) by S. T. Ovnatanov and G. P. Tamrazyan
Concerning the term "fracture" (razlom) and breaks with offsets, by A. E. Mikhailov
Application of geochemical and geophysical methods in exploration and prospecting of boron ores, by V. I. Baranov and V. L. Barsukov
Review section
Reference section.

INTERNATIONAL GEOLOGY REVIEW, VOL. 4, NO. 2, P. 127-251. Feb 62, 1v. 335 refs.
Order from AGI $5.00, $55.00/year

Trans. of Mineralogicheskii Sbornik (USSR) 1958, v. 12, p. 116-128; Zakonomernosti Razmeshcheniya Poleznykh Iskopaemykh (USSR) 1959, v. 2, p. 60-77, 97-109; and Sovetskaya Geologiya (USSR) 1960, no. 11, p. 3-44, 94-108, 156; no. 12, p. 22-43, 52-64.

DESCRIPTORS: *Geology, Periodicals, Minerals, Economics, Sulfides, Pyrites, Ores, Translations, Fluorspar, Deposits, Gels, Bulgaria, Mountains, Geophysics, Well drilling, Geophysical prospecting, Petroleum, Oils, Natural gas, Gases, Sources.

Contents:
A study of the composition of mineral "captives" in polyphase inclusions, by V. A. Kalyuzhnyi
Basic problems of investigation in the field of metallogeny, by A. I. Semenov and G. S. Labazin
Some basic problems of the distribution of sulfide mineralization in pyrite ore provinces, by S. N. Ivanov
Sovetskaya Geologiya, 1960, nos. 11-12: contents, critique, selected publication, availability of translations
Hundredth anniversary of the geosynclinal theory, by V. E. Khain and Yu. M. Sheinmann
The carboniferous-permian boundary and the Artemovsk complex, by V. D. Fomichev
Discovery of calcium-fluoride gel in the Slavyanka deposit, Bulgaria, by A. D. Nechev
Structure of the Urals in the light of geophysical data, by N. I. Khalevin
Drilling super-deep holes in the central part of the near-Caspian depression, by G. E. -A. Eisenstadt, N. V. Nevolin, and Ya. S. Eventov
Geologic zoning of mesozoic oil and gas beds of West Uzbekistan, by A. G. Babaev and E. V. Lebzin
Letters to the editor
Review section
Reference section.

Bobritskaya, M. A.
THE ABSORPTION OF MINERAL ELEMENTS FROM MASSIVE CRYSTALLINE ROCKS BY LITHOPHILOUS FLORA (Pogloshchenie Litofil'noi Rastitel'nost'yu Mineral'nykh Elementov iz Massivno-Kristallicheskikh Porod). Feb 62 [45]p. 28 refs. RTS 2026.
Order from OTS or SLA $4.60 62-24296

Trans. of Akad[emiya] Nauk SSSR. Pochvennyi Institut. Trudy, 1950, v. 34, p. 5-27.

DESCRIPTORS: *Rock, *Minerals, Absorption, *Plants, *Soils, Fertility, Sources.

Primary lithophilous flora observable with the naked eye consists of lichens and mosses, for which a specific sequence for colonizing the rock surface evidently exists. First to appear are the crustaceous lichens, followed by foliose and bushy lichens, colonizing the surface prepared by the former. Subsequently rock mosses colonize the cavities excavated in the rock surfaces with the help of the lichens. The character of the rock has a marked effect on the specific and, at times, generic composition of the primary lithophilous flora. Acid and basic silicate rocks differ considerably from each other in this respect. All representatives of the primary lithophilous flora have the ability for high concentration of P and S. Differences in mineral element absorption between individual representatives of the primary lithophilous flora were noted mainly in their relation to calcium, potassium, magnesium, and

iron. The lithophilous mosses specific to acid silicate rock are able to concentrate iron and magnesium. The primary lithophilous flora constitutes the material from which the organic part of primary soil is evolved. The ability of primary soils developing on shear rocks to support colonies of higher plants is due to the ash composition of the primary lithophilous flora. The composition, as we have seen, does in fact assure a high content of absolute organogens such as P, S, and K, and the presence in adequate quantities of the other elements of ash nutrition (Ca, Mg, Fe) needed for higher plants.

Borisenko, L. F.
SCANDIUM: [MAIN FEATURES OF ITS GEOCHEMISTRY, MINERALOGY AND GENETIC TYPES OF DEPOSITS]. July 62, 1v.
Order from CB $17.50

Trans. of mono. [Scandii; Osnovnye Cherty Geokhimii, Mineralogii, Geneticheskie Tipy Mestorozhdenii, Moscow, 1961, 128p.].

DESCRIPTORS: *Scandium, Geochemistry, Minerals, Deposits, Strategic materials.

Dohr, G.
A CONTRIBUTION BY REFLECTION SEISMOLOGY TO THE EXPLORATION OF THE DEEPER BASEMENT (Ein Beitrag der Reflexionsseismik zur Erforschung des Tieferen Untergrundes). [1962] [17]p. (foreign text included) 13 refs.
Order from SLA $1.60 62-14569

Trans. of Geologische Rundschau (West Germany) 1957, v. 46 [no. 1] p. 17-26.
Another trans. is available from AGI $5.00

DESCRIPTORS: *Earthquakes, *Reflection, *Geology, Exploration, Seismic waves, Blast.

The observation of reflections from very great depths is reported on, which appeared in reflection-seismic measurements by the Seismos G.m.b.H. by order of the Prussian Mining and Metallurgical AG., the Mobiloil AG. in Germany and the Wintershall AG. in various work districts of Germany. The most important groups can be assigned with great probability to the Conrad and Mohorovicic discontinuity. (Author)

Evgen'ev, A. E.
THE INFLUENCE OF THE VELOCITY OF DISPLACEMENT OF A LIQUID HYDROCARBON BY WATER ON "OIL RECOVERY" FROM NONHOMOGENEOUS SANDSTONES. [1962] 5p.
Order from ATS $8.95 ATS-11P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 11, p. 47-52.

DESCRIPTORS: *Rock, *Oils, *Recovery, Water, Hydrocarbons, Liquids.

Ezyashvili, A. G.
NEW METHOD OF DETAILED GEOLOGICAL SURVEYING. 31 May 62, 4p. 3 refs. JPRS: 13930.
Order from OTS $0.50 62-11672

Trans. of Akademiya Nauk Turkmenskoi SSR, Ashkhabad. Izvestiya: Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, 1961, no. 1, p. 117-118.

DESCRIPTORS: Geology, *Geological survey, Theory.

The purpose of this article is to describe a way of conducting survey work at scales of 1:25,000 and 1.10,000 that yields a high degree of accuracy and a great saving in resources, and, also, to present some recommendations to effect its acceptance in practice. The article has been compiled on the basis of the many years of survey work we have conducted along the northern slopes of the frontal ridge of Western and Central Kopet-Dag with the aim of identifying the most promising sectors and selecting the right course of future water exploration operations. (Author)

Khmelevskoi, V. K.
POSSIBILITIES OF THE RADAR METHOD IN GEOPHYSICAL SURVEYING. 5 Feb 62, 2p. AID rept. 62-16.
Order from OTS or SLA $1.10 62-23695

Abstract trans. of Moscow U. Vestnik. Seriya 4: Geologiya (USSR) 1961, no. 4, p. 72-79.

DESCRIPTORS: *Geophysical prospecting, Geological survey, *Radar, Simulation, Minerals, Rock, Electrical properties, Earth, Penetration, *Radar signals.

Korde, K. B.
ALGAE OF THE CAMBRIAN PERIOD ON THE SOUTHEASTERN PART OF THE SIBERIAN PLATFORM. [1962] 28p.
Order from ATS $29.65 ATS-38P60R

Trans. of Akad[emiya] Nauk SSSR. Paleontol[ogicheskii] Inst[itut]. Trudy, 1961, v. 89, p. 14-40.

DESCRIPTORS: *Algae, *Paleoecology, Geology, *Siberia.

Pokorny, Vladimir.
PRINCIPLES OF ZOOLOGICAL MICROPALAEONTOLOGY, VOL. 1, tr. by K. A. Allen. 1962, 623p.
Order from PP$20.00

Trans. of unidentified Czechoslovakian mono., n.p., n.d.

DESCRIPTORS: *Microscopy, *Paleoecology, *Protozoa, Radiolaria, Amoeba, Foraminifera.

Scheibe, E. A.
IRON AND MANGANESE ORE DEPOSITS IN AFRICA. Apr 62.
Order from BISI £5 5s BISI-2687

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, 1 Feb, p. 137-146.

DESCRIPTORS: *Iron, *Manganese, *Ores, *Minerals, Mining engineering, *Africa, Geography.

Skok, V. I.
THE INTERVALS OF DEEP-SEATED METAMORPHISM OF COALS. [1962] 11p.
Order from ATS $14.85 ATS-91P60R

Trans. of Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya] Geol[ogicheskaya] 1954 [v. 19] no. 6, p. 85-93.

DESCRIPTORS: *Coal, Geology.

Stetyukha, E. I., Pivovarov, V. T., and Lyshko, N. A.
RELATIONSHIP BETWEEN DENSITY, UNIT WEIGHT, AND POROSITY OF ROCKS. [1962] 6p.
Order from ATS $8.65 ATS-44P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 11, p. 23-27.

DESCRIPTORS: *Rock, Density, Porosity.

Oceanography

Boulaine, J.
THE ROLE OF VEGETATION IN THE FORMATION OF MEDITERRANEAN CALCAREOUS CARAPACES. [1962] 3p.
Order from ATS $5.00 ATS-79P60F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1961, v. 253, no. 22, p. 2568-2570. (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Plants, *Crustacea, Aquatic animals, *Mediterranean Sea, Calcite, Marine biology

Nazintsev, Yu. L.
EXPERIMENTAL DETERMINATION OF THE SPECIFIC HEAT AND THERMOMETRIC CONDUCTIVITY OF SEA ICE (Eksperimental'noe Opredelenie Teploemkosti i Temperaturoprovodnosti Morskogo L'da) tr. by Valys Zilius. Apr 60 [11]p. 9 refs. AmMetSoc T-R-285 + ; AD-251 861.
Order from OTS or SLA $1.60 61-19014

Trans. of Problemy Arktiki i Antarktiki (USSR) 1959, no. 1, p. 65-71.

DESCRIPTORS: *Specific heat, Conductivity, Heat transfer, *Ice, Sea water, *Thermodynamics, Measurement.

Specific heat of sea ice may be computed by the formula suggested by Malmgren:

$$C_{st} = C_i + \lambda_t \frac{S_i}{S_t^2} \cdot \frac{dS_t}{dt},$$

where C_i is the specific heat of fresh ice; λ_i (sic) is the melting point of fresh ice; S_i is the salinity of ice; and S_t is the concentration of brine in ice at temperature t. The thermometric conductivity of sea ice may in accordance with a change of its specific heat have various values, increasing with a decrease in temperature to those values which are close to the thermometric conductivity of fresh ice.

Seryakov, E. I.
THE ANNUAL TEMPERATURE VARIATIONS IN THE ACTIVE LAYER IN THAT PART OF THE BARENTS SEA WHICH IS NOT SUBJECT TO FREEZING. 1961 [6]p. 6 refs. NLL M.3487.
Order from OTS or SLA $1.10 62-23957

Trans. of Gidrometeorologicheskii Institut. Trudy (USSR) 1961, v. 10, no. 1, p. 52-55.

DESCRIPTORS: *Barents Sea, Sea water, Temperature Measurement, Periodic variations.

ENGINEERING

INDICATION OF DIMENSION TOLERANCES. [1962] [3]p. (figs. omitted). NLL M3309.
Order from OTS or SLA $1.10 62-23907

Trans. of [Russian State] Standard GOST 9171-59 (replaces GOST 3457-46) gr. G01, effective 1 Jan 60.

DESCRIPTORS: *Drafting, Standards.

INDICATION OF TOLERANCES ON DRAWINGS. [1962] [2]p. (1 table omitted) NLL M3310.
Order from OTS or SLA $1.10 62-23906

Trans. of [Russian State Standard] GOST 3457-46 (replaces GOST 7539-39) gr. G01, effective 10 Jan 48.

DESCRIPTORS: *Drafting, Standards.

Contents:
I. Indication of dimension tolerances (replaced by GOST 9171-59)
II. Indication of shape and surface position tolerances

VIEWS AND SECTIONS AND APPENDIX: CONSTRUCTING AXONOMETRIC PROJECTIONS. [1962] [13]p. (73 figs. omitted). NLL M 3305.
Order from OTS or SLA $1.60 62-23911

Trans. of [Russian State Standard] GOST 3453-59 (replaces GOST 3453-52) gr. G01, effective 1 Jan 60.

DESCRIPTORS: *Drafting, Standards.

Pavlenko, G. E.
THE DESIGN OF HYDROFOIL VESSELS. [1962] [12]p. NLL M. 3517.
Order from OTS or SLA $1.60 62-23876

Trans. of Sudostroenie (USSR) 1958 [v. 24] no. 11, p. 5-9.

DESCRIPTORS: Hydrofoils, Boats, *Hydrofoil boats, Design.

A diagram is given for determining the basic design factors of hydrofoil vessels. This diagram gives the relationship between the following quantities: displacement D; weight of the hull D_k; weight of the propulsion system D_m; variable load D_o; engine power N; speed of the vessel V; propulsive efficiency η; the drag R over the displacement in tons, i.e. $R/D = 1/\sigma$; where σ is the "quality" of the vessel. The diagram contains no approximations, empirical relationships or statistic norms and represents only accurate theoretical relationships derived from known physical quantities.

Salatinyan, I. Z. and Fokeev, V. M.
THE RATE OF GROWTH OF WAX DEPOSITS IN PIPES. [1962] 7p.
Order from ATS $10.15 ATS-06P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 9, p. 53-59.

DESCRIPTORS: *Pipes, *Waxes, *Deposits, Growth.

Aeronautical Engineering

Bertin, J.
APPLICATION OF DUCTS TO VERTICAL FLIGHT, TOWARDS THE DUCTED WING (Les Trompes Appliquées au Vol Vertical, Vers l'Aile-Trompe) tr. by G. A. Gavrel. 1962, 37p. NRCC Technical trans. 1025.
Order from NRCC $2.00 NRCC C-3984

Trans. of Technique et Science Aeronautiques (France) 1960, no. 2, p. 79-91.

DESCRIPTORS: *Vertical take-off planes, *Flying platforms, *Wings, *Ducts, Airplane engine ducts, Jet engines, Lift, Thrust.

Schulze, Otto.
SAFETY BELT LOCK FOR AVIATORS, tr. by F. H. B. 9 Mar 62, 4p. (3 figs. omitted).
Order from OTS or SLA $1.10 62-23734

Trans. of German patent 729,523, cl. 62c, gr. 23/03. by Nökel Werke G. m. b. H., patented from 1 Mar 39, grant announced 19 Nov 42, pub. 17 Dec 42.

DESCRIPTORS: Aviation personnel, Personnel, *Safety belts, Detents, Design.

The invention relates to a type of safety belt for aviators whose locked parts, when the lock is opened, can be separated with practically no friction, so that at the moment of opening, they rather drop apart than slide apart. For this purpose the safety belt lock of the invention comprizes a hinge whose two halves, after being pivoted by a specific angle, are separated, and a safety device, due to which the opening or dropping apart of the hinge halves depends on an action of the wearer. In its particulars it is characterized by a metal sheet element which on the side opposite a slot is outwardly bent so as to form a groove; an outer metal sheet which on the side provided with slots is bent so as to form steps oriented toward the body of the wearer; and guides on the side opposite the slots of the safety belt, which after the bent end is inserted in the groove-shaped bent portion prevent both metal sheets in the locked position from moving in their plane.

Staufenbiel, R.
CALCULATION OF THE SHORTEST LANDING DISTANCE (Zur Berechnung der Kürzesten Landestrecke) tr. by D. A. Sinclair. 1962, 65p. 2 refs. NRCC Technical trans. 1024.
Order from NRCC $3.50 NRCC C-3997

Trans. of Deutsche Versuchsanstalt für Luftfahrt, e.V. Bericht (West Germany) 1960, no. 130, 60p.

DESCRIPTORS: *Aircraft, *Landing, Determination, Meteorology, Wind, Aerodynamics, Roll, Short take-off planes, Design.

Chemical Engineering

SPONTANEOUS IGNITION OF BITUMINOUS COAL, PTS. I-IV (Samozapalnosc Wegli Kamiennych) tr. by A. Potocki. 1962, 69p. 45 refs. PL-480 Int.
Order from OTS $0.75 60-21354

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1953, no. 139, p. 1-38.

DESCRIPTORS: *Coal, *Ignition, Nitrogen, Chemical analysis, Oxygen, Oxidation, *Surface area, Temperature, Chemical reactions, Adsorption, Absorption, Poland.

Contents:
The relation of the spontaneous ignition of coal to its ability to sorb nitrogen and oxygen: a review of earlier research on the coal oxidation process, by W. Olpinski and P. Gabrys
Changes in the composition of the coal "atmosphere" in temperatures prevailing in the initial stages of

spontaneous ignition, by W. Olpinski and others
Large scale experiments on spontaneous ignition, by W. Olpinski and T. Pawlikowski
Mechanism of low temperature oxidation and spontaneous ignition characteristics of coal in the light of the present investigations, by W. Olpinski.

Agaev, A. A.
SEPARATION OF AMMONIUM SALTS OF NAPHTHENIC ACIDS FROM CRUDE OIL IN AN ELECTRIC FIELD. [1962] 4p.
Order from ATS $6.00 ATS-02P61R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 12, p. 95-98.

DESCRIPTORS: *Petroleum, *Electric fields, *Naphthenic acids, Acids, *Ammonium radicals, Separation.

Aleksandrov, I. A. and Skoblo, A. I.
BASIC CHARACTERISTICS AND FIELDS OF APPLICATION OF VARIOUS TRAY DESIGNS FOR FRACTIONATING AND ABSORPTION COLUMNS. [1962] 6p.
Order from ATS $11.40 ATS-72P60R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 1, p. 45-50.

DESCRIPTORS: *Laboratory equipment, Towers (Chemistry), Conveyors, Design, *Fractionation, *Absorption.

Berkovich, M. Ya., Kornonogov, A. P. and others.
THE THEORETICAL POSSIBILITY OF DRILLING WELLS WITH CIRCULATION OF REFRIGERATED AIR UNDER THE CONDITIONS OF EASTERN OIL REGIONS. [1962] 7p.
Order from ATS $13.35 ATS-54P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 5, p. 39-46.

DESCRIPTORS: *Well drilling, Theory, *Gas flow, Air, Geophysics, Petroleum, Sources.

Chetverikov, S. D.
A RATIONAL METHOD OF REPRESENTING THE COMPOSITION OF NATURAL WATERS AS APPLIED TO OIL-ASSOCIATED WATERS AND THEIR NORMATIVE CLASSIFICATION. [1962] 12p.
Order from ATS $18.25 ATS-81P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Geol[ogiya] i Razvedka (USSR) 1961, v. 4, no. 12, p. 85-94.

DESCRIPTORS: *Water, *Oils, *Petroleum, Mixtures, Classification.

Cramer, Charles, Feisst, Walter, and Mayer, Hans-Peter.
PROCESS FOR THE MANUFACTURE OF PURE UREA, tr. by G. E. 27 Mar 62, 8p.
Order from OTS or SLA $1.10 62-23728

Trans. of French patent 1,132,401, gr. 14, cl. 1, internat. cl. Co7c, by Inventa AG. für Forschung und Patentverwertung, Switzerland, filed 20 Apr 55, granted 5 Nov 56, pub. 11 Mar 57 (granted as Swiss patent 326,158, 15 Dec 57, pub. 31 Jan 58) (Corresponding British patent 775,933, appl. 25 Apr 55, complete specifications pub. 29 May 57).

DESCRIPTORS: *Urea, Synthesis, Production, Ammonia, Carbon dioxide, Chemical reactions, Manufacturing methods, Corrosion inhibition.

The invention relates to a process for reducing the corrosion which occurs in the production of urea in inoxidable steel apparatus from ammonia and carbon dioxide under pressure and at high temperatures, characterized in that oxygen is added to the starting gases. This process may include the following characteristics, taken individually or in combination: (1) oxygen-containing gases are added to the starting gases; (2) oxygen is used in a concentration ranging between 0.05% and 0.2% by volume; (3) carbon dioxide from a converter is used; and (4) the starting gases are used in stoichiometric amounts. (Author)

Davankov, A. B., Laufer, V. M. and others.
AN EXPERIMENT FOR EXTRACTING URANIUM AND OTHER ELEMENTS FROM WATERS OF THE ATLANTIC OCEAN. June 62, 13 refs.
Order from PS $8.30 PS CR-4026

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Isvetnaya Metallurgiya (USSR) 1962 [v. 5] no. 2, p. 118-123.

DESCRIPTORS: *Uranium, Chemical elements, *Water filters, Sea water, Atlantic Ocean, Solvent extraction.

Engelhardt, Wolf v[on] and Lübben, Heino.
STUDY OF THE INFLUENCE OF INTERFACIAL STRESS AND CONTACT ANGLE ON THE DISPLACEMENT OF OIL BY WATER IN POROUS MATERIALS. II. TEST RESULTS. (Untersuchungen zum Einfluss von Grenzflächenspannung und Randwinkel auf die Verdrängung von Öl durch Wasser in Porösen Körpern. II. Versuchsergebnisse). [1962] [15]p. (foreign text included) 11 refs.
Order from SLA $1.60 62-14555

Trans. of Erdöl und Kohle (West Germany) 1957, v. 10, no. 12, p. 826-830.
Another trans. is available from ATS $8.25 as ATS-43K27G [1958] 8p.

DESCRIPTORS: *Porous materials, *Oils, *Water, Water impingment, Surface tension, Stresses, Deposits, Processing, Tests, Fluid flow, Petroleum.

(See also ATS-87L35G)

Gimatudinov, Sh. K., Murav'ev, I. M., and Evgen'ev, A. E.
DISPLACEMENT OF OIL FROM HETEROGENEOUS POROUS MEDIA BY WATERS OF DIFFERENT COMPOSITION. [1962] 5p.
Order from ATS $8.25 ATS-87P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 12, p. 61-62.

DESCRIPTORS: *Oils, *Petroleum, Sources, *Water, Water injection.

Giovanardi, Giuseppe and Castagnetti, Enzo.
DISMOUNTABLE LAMELLAR METALLIC FILTER FOR WINE, OIL, AND GENERAL CHEMICAL INDUSTRY, tr. by J. B. 26 Apr 62, 4p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-24520

Trans. of Italian patent 433, 260, cl. I, appl. 12 July 47, granted 5 Apr 48, printed Jan 49.

DESCRIPTORS: *Porous filters, *Strainers, *Oil filters, Chemical industry, *Wines, *Oils.

The object of the invention is a lamellar metallic filter consisting of a number of plate rings provided with grooves in advance such that, combined by pressure, they form a cylindrical receptacle possessing on its entire perimeter an indeterminate number of holes communicating between interior and exterior. The principal feature of the device is that it can be produced with the greatest facility of construction, with an enormously large number of microscopic holes, capable of resisting very high pressures and being easily dismounted for effecting eventual cleaning required. (Author)

Godzhaev, S. B.
DETERMINATION OF DRILLING PARAMETERS AS A FUNCTION OF THE PHYSICOMECHANICAL PROPERTIES OF ROCKS. [1962] 6p.
Order from ATS $8.40 ATS-93P58R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1960, v. 3, no. 1, p. 27-33.

DESCRIPTORS: *Well drilling, *Rock, Physical properties, Mechanical properties.

Gorbunov, A. T. and Nikolaevskii, V. N.
STEADY-STATE FLOW OF FLUID INTO WELLS UNDER VOLUMETRIC CONTROL CONDITIONS. [1962] 7p.
Order from ATS $11.45 ATS-53P60R

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvest[iya]: Mekh[anika] i Mashinostr[oenie] 1961, no. 5, p. 163-167.

DESCRIPTORS: Petroleum, Sources, *Fluid flow, Volume, Control.

Häfer, R. A.
THE ION BAFFLE, A NEW ELECTRIC HYDROCARBON TRAP FOR OIL-SEALED ROTARY PUMPS. [1962] 18p. 14 refs.
Order from SLA $1.60 62-14783

Trans. of Vakuum-Technik (West Germany) 1961, v. 10, no. 4, p. 95-99.

DESCRIPTORS: *Rotary pumps, Ions, *Electric discharges, Cathodes, Polymers, *Hydrocarbons, Molecules, Cold cathode tubes.

A new electric hydrocarbon trap is described. It is based essentially on the fact that the hydrocarbon molecules flowing back from the pump are deposited in a solid CH polymer layer on the surface of the cathode by ion impact in an electric cold cathode discharge of inverse magnetron type. The mechanism is discussed in detail and the obtained concepts are verified by measurements of total pressures and mass spectrograms. In conjunction with a two-stage rotary slide valve pump (DU025) the ion baffle displaces the total final pressure in the high vacuum region (10^{-4} Torr) and reduces the hydrocarbon content of the residual gas atmosphere to about 1% of the original value. Practical applications of the device for continuous operation are discussed. (Author)

Kabiesz, Alfred M.
ECONOMIC EFFECTIVENESS OF INVESTMENTS IN THE PREPARATION OF COARSE COAL SIZES (Efektywnosc Ekonomiczna Inwestycji w Przerobce Mechanicanej Grubych Sortymentow Wegla) tr. by D. Brzostowska. 1961 [39]p. 6 refs. PL-480 Int.
Order from OTS $0.50 60-21274

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1958, no. 215, p. 1-18.

DESCRIPTORS: *Coal, Industrial plants, *Economics, Labor, Production, Statistical analysis.

A comparative study is presented of coarse coal preparation methods as applied in Poland and abroad, with special reference to costs involved in the actual preparation process and to investment outlay required for the construction of a new coal preparation plant. A calculation is included of the actual average costs of hand-picking coals of varying content of impurities, as also of the investment outlay required for the building of new sorting plants of various types. The actual costs linked with the different methods of mechanical preparation of coarse sizes are analyzed and established, together with the investment outlay involved in the construction of new washers of various types. Conclusions make it possible to determine conditions in which hand-picking of coarse coal sizes is economically justified, or conditions in which mechanical preparation of coarse coal sizes in jigs or in dense media is economic.

Kahane, Szymon and Milaszewicz, Olgierd.
CONTRIBUTION TO THE CHARACTERISTICS OF THE COKING COALS FROM THE WALBRZYCH BASIN, PTS. V-VI. (Przyczynek do Charakterystyki Wegli Koksujacych Zaglebia Walbrzyskiego) tr. by J. Burchart. 1962 [30]p. 39 refs. PL-480 Int.
Order from OTS $0.50 60-21275

Trans. of Glowny Instytut Gornictwa. [Kommunikat] (Poland) 1951, no. 93, p. 1-28.

DESCRIPTORS: *Coal, *Coke, Petrology, Plasticity, Temperature, Classification, Mechanical properties, Metallurgical analysis, Poland.

Contents:
A synthetic approach to the features of the coking coals from the Walbrzych Basin
Investigation of the mechanism of the caking power of Walbrzych coals by the Roga method.

Kiesewetter, A., Bulian, W., and Backhaus, L.
PROCESS FOR SECONDARY RECOVERY OF PETROLEUM BY FLOODING. [1962] 4p.
Order from ATS $6.00 ATS-39P60G

Trans. of German printed patent application 1,116,171, filed 7 Mar 58, opened for public inspection and pub. 2 Nov 61.

DESCRIPTORS: *Petroleum, Recovery, Sources, Water injection.

Kister, E. G.
THERMAL STABILITY OF CLAY DRILLING MUDS AND MEANS OF IMPROVING SAME. [1962] 8p.
Order from ATS $12.30 ATS-13P60R

Trans. of Neftyanoe Khoz[yaistvo] (USSR) 1961, v. 39, no. 11, p. 18-25.

DESCRIPTORS: *Clays, *Drilling fluids, Stability, Heat tolerance.

Korol, Dionizy.
SEPARATION OF PYRITES FROM COALS (Wydzielanie Pirytu z Wegli) tr. by H. Zamoyska. 1961 [23]p. 6 refs. PL-480 Int.
Order from OTS or SLA $0.50. 60-21277

Trans. of Glowny Instytut Gornictwa. [Kommunikat] (Poland) 1952, no. 119, p. 1-12.

DESCRIPTORS: *Coal, *Pyrites, Separation, Recovery, Sulfur, Chemical analysis, Chemical industry, Production, Poland.

Some 69 products from 26 collieries were examined with a view to separating from them the coal pyrites. It was proved that pyrites are mostly found in fine refuse from washeries and pneumatic separators, less often in middlings, slurries and flotation refuse. In roof and floor rocks, however, their presence has not so far been confirmed. Methods of separating pyrites in individual collieries are considered and a proposal is made for a flow sheet of a central preparation plant for recovery of high-grade pyrite concentrates from the first concentrates produced directly in collieries. Also described is the manner in which production of pyrites from Polish coals was started up. (Author)

Pampuch, Roman.
THE SWELLING OF COAL AND ITS STRUCTURE: THE ROLE OF HYDROGEN BONDS (Pecznienie Wegla a Jego Struktura: Rola Wiazan Wodorowych) tr. by D. Brzostowska. 1962 [37]p. 52 refs. PL-480 Int.
Order from OTS $0.50 60-21357

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1954, no. 153, p. 1-16.

DESCRIPTORS: *Coal, *Molecular structure, *Chemical bonds, Liquids, Water, Oxygen, Poland.

The swelling of coals in polar organic liquids is governed by the following two factors: tendency to form hydrogen bonds with polar groups of coal, and the cohesive energy density of the liquids interacting with the coal substance. The effect of these factors may be blurred by the presence of steric hindrance. The specific interaction between this kind of liquids and the organic coal substance consists, probably, in the formation and/or weakening of hydrogen bonds. In the course of the coalification process, considerable changes take place in the range of flame coals, consisting in the formation of hydrogen bonds between polar functional groups of the organic coal substance at the expense of nonassociated groups of this kind. This process takes place in the most intensive form in a direction perpendicular to the bedding plane. The swelling of coal in water is connected, in a first approximation, with the amount of nonassociated functional oxygen groups in the coals. (Author)

Puchkov, N. G., Borovaya, M. S. and others.
SERVICE PROPERTIES OF BASE OILS WITH VARIOUS TREATING METHODS. [1962] 9p.
Order from ATS $12.25 ATS-51P60R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 1, p. 53-59.

DESCRIPTORS: *Oils, Physical properties, Processing, *Petroleum.

Rodewald, Hans J.
CONTRIBUTIONS TO THE POLYMORPHISM OF MODIFICATIONS. VIII. THE METAL-CATALYZED DIAMOND SYNTHESIS IN SWEDEN, USA AND SOUTH AFRICA IN THE FRAMEWORK OF POLYMORPHISM OF MIXTURES. [1962] 14p. 20 refs.
Order from SLA $1.60 62-14835

Trans. of Chemiker Zeitung (West Germany) 1961, v. 85, no. 17, p. 635-[639].

DESCRIPTORS: *Diamonds, Synthesis, *Polymorphism, Metals, Catalysts, Catalysis, Pressure, High pressure research, Mixtures, *Synthetic gems.

Roga, Blazej and Ihnatowicz, Maria.
CHARACTERISTICS OF LOW-TEMPERATURE TARS FROM SOME POLISH BITUMINOUS AND BROWN COALS (Charakterystyka Prasmol z Niektorych Polskich Wegli Kamiennych i Brunatnych) tr. by W. Kulerski. 1962 [40]p. 17 refs. PL-480 Int.
Order from OTS $0.50 60-21361

Trans. of Glowny Instytut Gornictwa. [Komunikat] (Poland) 1954, no. 161, ser. B, p. 1-16.

DESCRIPTORS: *Coal, *Coal tar, Processing, *Carbonization, Pyrolysis, Oils, Temperature, Physical properties, Poland.

Tochilov, V. I.
FURTHER REDUCTION IN THE LOSS OF PETROLEUM PRODUCTS CONTAINED IN THE WASTE WATERS OF BAKU PETROLEUM REFINERIES. [1962] 6p.
Order from ATS $8.50 ATS-06P61R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 12, p. 113-116.

DESCRIPTORS: *Petroleum, Refineries, Processing, *Chemical waste, Water, Reduction, Purification.

Tyuryaev, I. Ya., Tsailingol'd, A. L., and Builov, A. B.
NONHOMOGENEITY OF A FLUIDIZED CATALYST BED. [1962] 6p.
Order from ATS $9.30 ATS-60P58R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 5, p. 60-63.

DESCRIPTORS: *Fluidized solids, Catalysts.

Civil Engineering

PRECAST CONCRETE BLOCK CHIMNEY UNITS (Les Conduits de Fumée en Boisseaux de Béton) tr. by D. A. Sinclair. 1961, 80p. NRCC Technical Trans. 980.
Order from NRCC $4.00 NRCC C-3837

Trans. of Centre Scientifique et Technique du Bâtiment [Paris]. Cahiers, 1960, no. 348.

DESCRIPTORS: *Concrete, Mechanical properties, Buildings, Housing, Structures, Construction, Fires, Hazards, Brick, Clays, Walls, Coatings, Joints, Moisture, Fracture (Mechanics).

Miyakawa, Isamu.
SOIL ENGINEERING RESEARCH ON PEATY ALLUVIA, REPTS. 1-3, tr. by K. Shimizu. Jan 62, 141p. 16 refs. NRCC Technical Trans. 1001.
Order from NRCC $7.00 NRCC C-3915

Trans. of [Doboku Shikenjo Iho] (Japan) 1959, no. 20, 88p.

DESCRIPTORS: *Soils, Engineering, Rock, Sedimentation, *Peat, Physical properties, Construction, *Roads, Moisture.

Contents:
Geotechnical properties of existing gravel roads over peat areas in the Ishikari district
Contributions to some geotechnical exploration methods for peat bogs
General physical properties of peat in the Ishikari district with special reference to the moisture-ignition loss ratio.

Electrical and Electronic Engineering

Az'yan, Yu. M. and Migulin, V. V.
ON SELF-OSCILLATIONS IN A SYSTEM WITH RETARDED FEEDBACK. [1961] 16p. 3 refs. MDF A 127.
Order from OTS or SLA $1.60 62-23129

Trans. of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, no. 4, p. 418-427.

DESCRIPTORS: *Signals, *Amplifiers, *Oscillation, *Feedback, Delay circuits, Circuits, Frequency, Theory, Operational calculus, Functions, Integrals.

The self-oscillatory properties of a system which is a signal amplifier with retarded feedback are investigated, where the dispersion of the retarded feedback is taken into account. As a result of the analysis, conditions are found for the system self-excitation and relations are established which determine the shape and the frequency of the exciting self-oscillatory process for given system parameters. The actual dispersion properties of a lag system in a feedback channel (LC loop, coaxial cable) were taken into account in the computations. The conclusions obtained are verified experimentally. The experimental results are in agreement with the proposed explanation of the build-up process of stationary self-oscillations. (Author)

Barchukov, A. I., Vasil'ev, G. A. and others.
ELECTROMECHANICAL KLYSTRON FREQUENCY STABILIZER [Elektromekhanicheskii Stabilizator Chastoty Klistrona]. [1961]. 5p. MDF B-102.
Order from OTS $0.50 62-11239

Trans. of Radiotekhnika (USSR) 1955, v. 10, no. 3, p. 29-32.

DESCRIPTORS: *Klystrons, *Frequency stabilizers, Tests.

A stabilizer simple to prepare and to use was developed, which permits the stabilized klystron frequency to be reconstructed with the least amount of tuning operations. The functions of the carrier resonator and the discriminator were combined in one unit where electromechanical modulation of the resonant frequency of the cavity wavemeter was used by having the bottom of the wavemeter in the form of a movable membrane. A computation is made of the stabilizer and an estimate of its operational stability.

Basov, N. G., Veselago, M. E., and Zhabotinskii, M. E.
INCREASING THE Q OF A CAVITY RESONATOR USING REGENERATION [Uvelichenie Dobrotnosti Ob"emnogo Rezonatora pri Pomoshchi Regeneratsii]. [1961] 1p. 4 refs. MDF B-106.
Order from OTS $0.50 62-11612

Trans. of #Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1955, v. 28, no. 2, p. 242.

DESCRIPTORS: *Cavity resonators, Operation, Regeneration.

An essential increase in the Q can be obtained, without using superregeneration, by using extreme negative feedback. The amplifier gain and phase shift, included in the negative feedback, is determined basically by the feedback loop parameters, which guarantees the required stability of the apparatus. (Extracted)

Cherepenin, N. V.
ON THE INFLUENCE OF SECONDARY ELECTRON EMISSION OF THE INSULATORS ON THE STABILITY OF VACUUM TUBE PARAMETERS. [1961] 20p. 4 refs. MDF C-110.
Order from OTS $0.50 62-11429

Trans. of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, p. 38-50.

DESCRIPTORS: *Electron tubes, Stability, *Mica, *Secondary emission, Oxide cathodes, Electron bombardment, Electrons.

The phenomenon of the secondary emission from insulators of a vacuum tube is analyzed as is also the instability of the parameters dependent thereon and the curtailment of the tube life. The latter is explained by the oxide cathode being poisoned by the gases liberated during the insulator bombardment by the electrons. (Author

Golovan, A. T. and Dubenskii, A. A.
AN ASYNCHRONOUS SELF-EXCITING ALTERNATOR (Asinkhronnyi Samovozbuzhdayushiisya Generator Peremennogo Toka). Feb 62 [12]p. RTS 2028
Order from OTS or SLA $1.60 62-24298

Trans. of Elektrichestvo (USSR) 1945, no. 5, p. 50-52.

DESCRIPTORS: *Generators, *Frequency, Control, Capacitors, Electrostatic capacitance, Theory, Operation.

On the basis of theoretical analysis it is shown that it is possible to control the frequency of a generator over a wide range by changing the capacitance of the capacitors. A method of calculating the capacitance required to obtain a given frequency is also explained. (Author)

Gosiewski, Anatol.
ABOUT THE SWITCHING CURVE APPROXIMATION IN OPTIMUM RELAY SYSTEMS. 28 Nov 61 [28]p. JPRS: 11249.
Order from OTS or SLA $2.60 62-19481

Trans. of Archiwum Automatyki i Telemechaniki (Poland) 1961, v. 6, no. 1, p. 3-21.

DESCRIPTORS: *Relays, *Servomechanisms, Servomotors, Torque, Feedback, Switching circuits, Circuits, Numerical analysis, Synthesis, Automatic, Control.

The paper considers simple approximations of the switching curve of an optimum relay servomechanism with constrained torque in the servomotor. Dynamic properties of a "quasioptimal" servomechanism with a linear approximation, i.e. one with rate feedback and linear-piecewise approximation are considered. It is shown that under certain conditions dynamic properties of servomechanisms with a suitably selected switching curve approximation differ little from the properties of optimal systems. Analytical considerations contained herein may be helpful in the synthesis of simple servomechanisms having properties close to optimal. (Author)

Il'nitskii, L. Ya. and Chervetsov, V. V.
GÉNÉRATEUR D'IMPULSIONS DONT LA FRÉQUENCE EST DIRECTEMENT PROPORTIONNELLE À LA TENSION DE COMMANDE (Generator Impul'sov, Period Povtoreniya Kotorykh Pryamo Proportsionalen Upravlyayushchemu Napryazheniyu) [A Pulse Generator in Which the Pulse Repetition Rate is Directly Proportional to the Control Voltage] tr. by B. de Trezvinsky. 5 Nov 61 [8]p. (Russian text included) 1 ref. CEA Trans. no. R 1426 (Text in French).
Order from OTS or SLA $1.10 62-19030

Trans. in French of #Radiotekhnika (USSR) 1961, v. 16, no. 2, p. 71-73.

DESCRIPTORS: *Pulse generators, Pulse counters, *Voltage, *Control, Pulse ratio indicators.

Jarecky, M. and others.
AN ALUMINUM ALLOY FOR ELECTRICAL PURPOSES. Feb 62.
Order from MT $10.00

Trans. of Czechoslovak patent letter 86,889 and Czechoslovak state standard 42 4405.

DESCRIPTORS: *Aluminum alloys, Alloys, *Electrical equipment.

Khamudkhanov, M. Z.
INVESTIGATION OF A CONTROLLED INDUCTION MOTOR DRIVE FED FROM AN IONIC FREQUENCY CONVERTER WITH AN INTERMEDIATE RECTIFIED CURRENT CIRCUIT (Issledovanie Reguliruemogo Asinkhronnogo Elektroprivoda, Pitaemogo ot Ionnogo Preobrazovatelya Chastoty s Promezhutochnoi Tsep'yu Vypryamlennogo Toka). Feb 62 [17]p.

11 refs. RTS 1887.
Order from OTS or SLA $1.60 62-24286

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1958, no. 5, p. 7-15.

DESCRIPTORS: *Induction motors, *Inverter circuits, Inverted rectifiers, Operation, Electronic drives, *Frequency converters, Frequency, Control, Electric motors.

Results are given of an investigation carried out on the combined operation of an induction motor and a self-excited 3-phase bridge-type inverter. The value of the commutating capacitors must be varied in inverse proportion to frequency. The system becomes self-controlled for $f > 80$ c. For all the actual operating conditions the shape of the inverter output voltage curve is practically sinusoidal. The ionic frequency converter can provide a continuous control of the speed of an induction motor drive over a wide range and for different types of loading.

Khomyakov, M. V.
OPERATIONS EXPERIENCE OF THE NON-DESTRUCTIVE TESTING OF TRANSFORMER INSULATION. [1959] [7]p. C. E. Trans. 1130; [NLL] M461.
Order from OTS or SLA $1.10 59-22529

Abridged trans. of mono. Scientific Technical Session on the Operation of High Voltage Insulation (no. 2) [held at] Moscow, 1955. Transactions, p. 58-65.

DESCRIPTORS: *Transformers, *Electric insulation, Non-destructive testing, Oils, Dielectric properties.

In some cases, for the purpose of assessing the dielectric characteristics of oils, use can be made of measurement of the insulation resistance of the oil as carried out with the Megger. (Extract)

Kravchenko, V. S. and Sun, Yui-chi.
THE INTRINSIC SAFETY OF HIGH-FREQUENCY a.c. CIRCUITS (Iskrobezopasnost' Elektricheskikh Tsepei Peremennogo Toka Vysokoi Chastoty) tr. by L. Meyer. June 61 [10]p. 9 refs. S. M. R. E. Trans. no. 4529; NLL M. 3455.
Order from OTS or SLA $1.10 62-24851

Trans. of Elektrichestvo (USSR) 1961, no. 1, p. 77-88.

DESCRIPTORS: *High frequency, *Alternating current, *Circuits, Operation, Safety, Electric discharges, Electric currents.

An investigation into the incendivity of discharges from the breaking of high-frequency circuits confirmed the principle that the minimum ignition energy of these discharges is constant, and made it possible to give a mathematical expression for the igniting conditions for discharges in an inductance-capacitance circuit. (Author)

Krones, F.
ELIMINATION OF THE AUDIBILITY OF SPLICES IN MAGNETIC SOUND FILMS. [1961] 12p.
Order from SLA $1.60 62-10591

Trans. of [die] Kinotechnik (Germany) 1959, no. 4, p. 25-29.

DESCRIPTORS: *Magnetic recording systems, *Magnetic tape, Circular coils, Noise, Reduction, Electronic equipment.

Kurman, Konstanty.
A METHOD OF TRANSIENT PROCESS ANALYSIS IN SAMPLED AND QUANTIZED CONTROL SYSTEMS. 29 Nov 61 [15]p. JPRS: 11295.
Order from OTS or SLA $1.60 62-19549

Trans. of Archiwum Automatyki i Telemechaniki (Poland) 1961, v. 6, no. 1, p. 23-32.

DESCRIPTORS: *Control systems, *Digital computers, Computers, Dynamics, Transients, Sampling, Numerical analysis, Difference equations, Analog-to-digital converters, Differential equations.

The method described concerns the calculation of dynamic processes in control systems working with a digital computer for given system parameters and inputs. The method reduces to expanding the open-loop system into basic channels whose inputs constitute the coordinates of a phase space, and to giving recurrent formulas which may form the basis for the digital computer programming. (Author)

Leont'ev, L.
SYNTHESIS OF RELIABLE SYSTEMS FROM UNRELIABLE ELEMENTS. 16 May 62 [10]p. 2 refs. JPRS: 13813.
Order from OTS or SLA $1.10 62-24720

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1962, no. 2(175) p. 51-57.

DESCRIPTORS: *Electronic systems, Synthesis, *Electronic equipment, Electronic circuits, Circuits, Failure (Mechanics), Probability, *Reliability.

Problems are examined connected with the determining of the quantitative ratios between the probabilities of being put out of action and the number of reserve elements which must be selected for any one type of reserving in order to ensure either the prescribed or the maximum possible reliability of the system. The problem is solved under the condition that the break and the short are simultaneous and independent events.

Levit, L. M.
PROTECTING POWER SYSTEMS FROM FREQUENCY SURGES (Zashchita Energosistemy ot Povysheniya Chastoty). Mar 62 [13]p. 6 refs. RTS 2029.
Order from OTS or SLA $1.60 62-24299

Trans. of Elektricheskie Stantsii (USSR) 1961, v. 32, no. 5, p. 71-75.

DESCRIPTORS: *Power supplies, Frequency, Control, Switching circuits, Circuits, *Hydroelectric power systems, Thermoelectricity, Electricity, *Power plants, Safety.

Mikhailov, N. and Solovei, A.
TELEVISION CENTER IN LENINGRAD (Teletsentr Goroda Lenina). 22 Aug 61 [13]p. JPRS: 9942.
Order from OTS or SLA $1.60 62-23472

Trans. of Radio, Moscow (USSR) 1961, no. 5, p. 3-5.

DESCRIPTORS: *Television stations, USSR, Design, Construction.

A large television center is being built to broadcast two black and white programs and one color television program and three ultra short-wave with frequency modulation radio-broadcasting programs (including stereophonic broadcasting). The new Leningrad television center is being provided with facilities for a wide exchange of programs with other television centers of the country over radio-relay and cable communications lines. (Extract)

Plishkin, Yu. M.
ON THE QUESTION OF THE ESTIMATE OF THE INTEGRAL CRITERIA OF THE QUALITY OF THE REGULATION OF A NONLINEAR SYSTEM. [1961] 11p. 5 refs. MDF P 110.
Order from OTS or SLA $1.60 62-23073

Trans. of #Avtomatika i Telemekhanika (USSR) 1955, v. 18, no. 1, p. 19-26.

DESCRIPTORS: *Non linear systems, Automatic, *Control systems, Operation, Numerical analysis, Nonlinear differential equations, *Integrals, Special functions.

Liapunov functions for nonlinear automatic regulation systems are used to estimate the integral criteria of the quality of regulation. (Author)

Povarov, G. N.
MATHEMATICAL THEORY OF THE SYNTHESIS OF (l, k) TERMINAL CONTACTS (Matematicheskaya Teoriya Sinteza Kontaktnykh (l, k)-Polyusnikov). [1961] 7p. 16 refs. MDF P-119.
Order from OTS $0.50 62-11409

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 5, p. 909-912.

DESCRIPTORS: *Electrical networks, Relays, *Circuits, Synthesis, Theory, *Special functions, Electric connectors, Terminal blocks.

See also 62-16089

Reimann, H. F.
ELECTRICAL MEASUREMENT OF DISTANCES. 12 Mar 62 [35]p. JPRS: 12920.
Order from OTS or SLA $3.60 62-23453

Partial trans. (some sections summarized) of Vermessungstechnik (East Germany) 1961, v. 9, no. 6, p. 176-186.

DESCRIPTORS: *Photoelectric cells, *Secondary emission, *Electron multipliers, Operation, Phase modulation, Amplitude modulation, Frequency modulation, Modulation, Electrical equipment.

Shishkin, N. F. and Danilin, P. Ya.
A COMBINED METHOD OF DISCONNECTING POWER ELECTRIC CIRCUITS (Kombinirovannyi Sposob Kommutatsii v Silovykh Elektricheskikh Tsepyakh) tr. by L. Meyer. Apr 61 [9]p. 2 refs. S. M. R. E. Trans. no. 4507; NLL M. 3301.
Order from OTS or SLA $1.10 62-23920

Trans. of Elektrichestvo (USSR) 1960, no. 7, p. 47-50.

DESCRIPTORS: Power supplies, *Alternating current, *Circuits, *Circuit breakers, *Switches, Electric currents.

Sorin, Ya. M.
CENTENARY OF THE BIRTH OF A. S. POPOV. [1962] [8]p. (4 illus. omitted). NLL M. 3596.
Order from OTS or SLA $1.10 62-24667

Trans. of #Priborostroenie (USSR) 1959, no. 3, p. 3-6.

DESCRIPTORS: Electromagnetic waves, *Radio communication systems, Electronics, Electrical engineering.

Some of Popov's achievements in radio communication, from May 7, 1895 until his death in 1905, are described.

Mechanical Engineering

Fainberg, A. S.
FLAMELESS-COMBUSTION BURNER. [1962] 2p.
Order from ATS $2.00 ATS-62P58R

Trans. of Neftyanik (USSR) 1961, v. 6, no. 11, p. 23.

DESCRIPTORS: *Combustion chambers, Design.

Mikunis, S. I.
UNBALANCE OF FLEXIBLE ROTORS (O Neuravnoveshennosti Gibkikh Rotorov) tr. by D. R. H. Phillips. 19 Apr 61 [9]p. 5 refs. Trafford Park trans. no. 2941; NLL M. 3330.
Order from OTS or SLA $1.10 62-23924

Trans. of Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 11, p. 56-59.

DESCRIPTORS: *Flexible shafts, Steam turbine rotors, Deflection, Vibration.

A discussion is presented of some problems associated with the study of the balancing of flexible shafts, with reference to the connection between the deflection of the rotor and vibration of the supports.

Seyb, E.
REMOVAL OF RUST AND SCALE FROM STEAM GENERATORS. [1962] 10p.
Order from ATS $14.35 ATS-84P60G

Trans. of Brennstoff-Wärme-Kraft (West Germany) 1960, v. 12, no. 1, p. 9-13.

DESCRIPTORS: *Corrosion, *Oxides, *Iron compounds, *Scale, Disposal, Boilers, Steam.

Ordnance, Missiles, and Satellite Vehicles

ROTATION OF RE-ENTRY NOSE CONE. 10 Oct 61, 3p. AID Rept. 61-141; AD-265 374.
Order from OTS or SLA $1.10 61-28803

Review of #Prikladnaya Matematika i Mekhanika (USSR) 1961, v. 25, no. 4, p. 600-610 and of mono. Report on the Works of P. N. Kubanskii Concerning the Effects of Acoustic Oscillations, Washington, 1959, 63p.

DESCRIPTORS: *Re-entry aerodynamics, *Re-entry vehicles, Aerodynamic heating, Heat transfer, Gas flow, Thermodynamics, Pressure, Enthalpy.

Rotation is considered as a possible cooling method for a cone moving through the atmosphere for the following reasons. Heat transfer to the cone surface from the combined shock wave front would be less because the wave front would be farther removed from the cone surface. The effect of centrifugal force should also reduce heat transfer to the cone surface. Along any line extended from the apex of the cone through the disturbed zone pressure and enthalpy increase in proportion to the square of the distance from the apex, while density remains constant. The effect of centrifugal force, however, could logically be expected to reduce pressure, enthalpy, and density in any plane of rotation from the cone surface outward to the combined wave front 4. The cooling effect of rotation could be intensified by resonators (surface holes) on the cone surface. Resonators, by increasing the acoustic effect, would increase the disturbance in the boundary layer on the cone surface. Cooling by rotation would have little effect on the apex area of the cone, which should be made of a special heat resistant material. An aerodynamic spike bow would advance the wave front apex further and thus still further reduce the heat transfer to the cone surface. (Extracted)

Golikov, A. and Smirnov, I.
OVER THE ROUTES OF THE COSMOS. 29 Mar 62 [11]p. FTD-TT-62-2.
Order from OTS or SLA $1.60 62-24268

Unedited rough draft trans. of Ogonek (USSR) 1961, v. 39, no. 14, p. 2-3.

DESCRIPTORS: *Space flight, *Spaceships, Dogs, Satellite vehicle research.

Information is given on the flights of the dogs Zvezdochka (fifth space ship), and Belka and Strelka.

Kirillov, Ya.
BLACKSMITHS OF THUNDER: A REPORT FROM THE CONVEYER OF COSMIC ROCKETS. 14 Mar 62 [6]p. FTD-TT-62-201; SC-1043; ASTAR 1976.
Order from OTS or SLA $1.10 62-24281

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1961, 20 Aug, p. 4.

DESCRIPTORS: *Rockets, *Warheads, *Space flight, *Spaceships.

Soviet achievements in rocketry are praised. On the one hand M. V. Keldysh, President of the USSR Academy of Sciences, is quoted as saying that "the carrier rocket has not only a peaceful purpose.... [although].... we are doing everything to use these rockets for science and peace", and on the other hand Krushchev is quoted as saying about one plant, "In one year this plant made 250 rockets with hydrogen warheads."

Kotel'nikov, V. A.
RADIO COMMUNICATION BETWEEN THE SPACESHIP "VOSTOK-2" AND EARTH. Press conference of 11 Aug 61. [1962] 3p.
Order from OTS or SLA $1.10 62-10637

Trans. of #Elektrosvyaz' (USSR) 1961, v. 15, no. 9, p. 1-2.

DESCRIPTORS: *Radio communication, Radio Equipment, *Spaceships.

Maksimov, N.
ROCKET AGAINST ROCKET. 13 Feb 62, 11p. JPRS: 12443.
Order from OTS $0.50 62-11166

Trans. from Nedelya (USSR) 1962, no. 3, p. 10-11.

DESCRIPTORS: *Rockets, *Guided missiles, Surface to surface, *Nuclear warheads, Warheads, Detection, Radar equipment, Guided missile warheads.

General information is reviewed on the problems connected with detecting and destroying missles in flight and on their launching pads. The capabilities and weaknesses of U. S. developments (the radar fences, project Tepee, "Midas", "Nike-Zeus", etc.) are pointed out.

Petrovich, G. V.
SOVIET COSMONAUTS IN NEARBY SPACE. [1961] 13p. 1 ref. MDF P-172.
Order from OTS or SLA $1.60 62-19928

Trans. of A[kademiya] N[auk] SSSR. Vestnik, 1961, [v. 31] no. 5, p. 13-22.
Another trans. is available from OTS or SLA $1.60 as 61-28552, JPRS-8897, 19 Sep 61 [14]p.

DESCRIPTORS: *Astronauts, *Space flight, Manned, *Spaceships, Satellite vehicles, Design, Launching, Operation.

Information is presented on the space ship Vostok of Yu. A. Gagarin.

Sanitation and Safety Engineering

Karpov, E. F. and Kravchenko, V. S.
AN INVESTIGATION INTO THE THERMO-CATALYTIC PRINCIPLE OF METHANE DETECTION IN A MINE ATMOSPHERE (Issledovanie Termokataliticheskogo Printsipa Detektirovaniya Metana v Rudnichnoi Atmosfere) tr. by L. Meyer. Mar 61 [14]p. 5 refs. S. M. R. E. Trans. no. 4490; NLL M. 3276.
Order from OTS or SLA $1.60 62-24083

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvest[iya]: Metall[urgiya] i Toplivo, 1959, no. 5, p. 174-184.

DESCRIPTORS: *Methanes, Detection, *Mining engineering, Gases, Catalysts, Ventilation.

A compound platinum-palladium catalyst with an active aluminium oxide base which is highly active (240 cal/min of heat can be emitted per cm^3 catalyst with a CH_4 concentration of 2%), and has a low operating temperature (360°), is very stable, and has adequate mechanical strength, has been developed and submitted to an all-round investigation. A transformer element for a methane indicator has been developed and the thermal phenomena occurring on its surface when stationary are analysed. On the basis of the present work the "Gidrougleavtomatizatsiya" Institute has developed a methane relay for mines. The parameters of its electric circuits are intrinsically safe. The equipment provides continuous monitoring of CH_4 in the return ventilation air flow, emergency signalling and the automatic disconnexion of the supply of electric power when dangerous CH_4 concentrations are reached. (Author)

Voskoboinikov, V. I.
POSSIBILITIES OF WORKING OUT FAVOURABLE VENTILATION CONDITIONS BY MEANS OF AN ELECTRIC ANALOGUE DURING AN UNDERGROUND MINE FIRE (Izyskanie Blagopriyatnogo Ventilyatsionnogo Rezhima Shakhty pri Likvidatsii Podzemnogo Pozhara s Pomoshch'yu Elektricheskoi Modeli) tr. by F. M. Janus. June 61 [12]p. 3 refs. S. M. R. E. Trans. no. 4531; NLL M. 3433.
Order from OTS or SLA $1.60 62-24844

Trans. of Ugol' Ukrainy (USSR) 1960, v. 4, no. 7, p. 16-20.

DESCRIPTORS: *Mines, *Fires, *Ventilation, Toxicity, Heat, Air, Wood, Combustion, Analog systems.

A method was developed and tested ventilation calculations (using an electric analogue under the conditions of developing underground fire) consisting in the calculation of the initial data for the electric model of the ventilation current passing through the fire source, and in the determination of its parameters.

Wetzig, H.
PROTECTIVE LAYER FOR PREVENTING EXPLOSIONS AND IGNITION IN FUEL STORAGE TANKS AND PROCESS FOR ITS PRODUCTION. Apr 62, 500 words.
Order from TTIS $4.50 TTIS NS 37

Trans. of East German [patent] 22,574, appl. 10 Nov 58, pub. 20 Jan 62.

DESCRIPTORS: *Fuel storage tanks, Explosions, Ignition, Safety.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

COORDINATION OF SCIENTIFIC RESEARCH IN THE FOOD INDUSTRY. 10 Apr 62 [13]p. JPRS: 13470.
Order from OTS or SLA $1.60 62-23985

Trans. of Konservnaya i Ovoshchesushil'naya Promyshlennost' (USSR) 1961 [v. 16] no. 9, p. 1-4 and 43-45.

DESCRIPTORS: *Food, *Scientific research, Economics, Industry.

Contents:
Improving coordination of scientific research
Scientific Coordination Conference on Problems of Economics, June 61, by G. M. Movshovich.

Drozdov, M.
EXPLOITATION OF NEW FISHERIES IN THE FAR EAST (Puti Ispol'zovaniya Novykh Ob"ektov Promysla no Dal'nem Vostoke) tr. by M. A. Kravanja. [1962] 5p.
Order from OTS or SLA $1.10 62-23276

Trans. of Rybnoe Khozyaistvo (USSR) 1961, v. 37, no. 10, p. 46-50.

DESCRIPTORS: *Fisheries, Fishes, Preservation, Chemical analysis, Food, Pacific Ocean, Bearing Sea.

Juul, Flemming.
METHODS FOR THE PREVENTION OF THE DARKENING OF POTATOES IN THE HOUSEHOLD. [1962] 4p.
Order from SLA $1.10 62-16167

Trans. of mono. Studies of the Blackening of Potatoes after Cooking, Copenhagen, 1949, chap. 13.

DESCRIPTORS: *Potatoes, *Bleaching, Food, Preparation.

Tröb, C. L. Paul and Posch, J.
PUBLIC HEALTH SUPERVISION OF THE ICE CREAM BUSINESS AND ICE CREAM PLANTS AS WELL AS OF MOBILE SELLING OF FOOD AND CONDIMENTS, INCLUDING TOBACCO PRODUCTS. [1962] 11p.
Order from K-H $13.75 K-H 11128-c

Trans. of Deut[sche] Lebens[mittel]-Rundsch[au] (West Germany) 1961, v. 57, no. 3, p. 57-60.

DESCRIPTORS: *Public health, *Ice cream, *Food, *Condiments, *Tobacco, Commerce.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

SOVIET MACHINE BUILDING: SELECTED TRANSLATIONS NO. 65. 27 June 61 [28]p. JPRS: 9569.
Order from OTS or SLA $2.60 61-27074

Trans. of Na Stroikakh Rossii (USSR) 1961, no. 2, inside back cover; Mashinostroitel' (USSR) 1961, no. 2, p. 15-16, 46; Mekhanizatsiya Stroitel'stva (USSR) 1961 [v. 18] no. 3, p. 22; Stroitel'nye i Dorozhnye Mashiny (USSR) 1961 [v. 6] no. 3, p. 3-9, 22-23, 27-28, 31-32.

DESCRIPTORS: *Machines, Construction, Forge presses, Blowers, Compressors, Loaders, Road building equipment, Snow removal, Electrical equipment, Tractors.

Contents:
250-80 ton single-crank trimming press
PPP-2 semiautomatic pulsating core-blowing machine (Machinery, Fabrications and Accessory Equipment,
Two proposals to plants manufacturing compressors, by V. I. Avdeev and D. P. Sherle
New machines and mechanisms
New multi-bucket loaders, by O. V. Sinev
New road and construction machinery, by A. A. Vasil'ev
New self-propelled road roller, by Yu. M. Vasil'ev and E. F. Yanson
D-450 worm-type rotary snow cleaning machine, by V. A. Korzhenevskii
D-467 self-propelled mixer, by G. I. Tsekhanskii
New ChTZ electric tractor with mounted equipment for construction work, by S. F. Berdnikov
D-531 road miller mounted on a motor grader, by V. A. Merkulovich.

Gulyaev, G. I. and Yurgelenas, V. A.
ROLL-PASS DESIGN AND DRAWING OF TUBES IN TWO-THREE-, AND FOUR-ROLL REDUCING AND SIZING MILLS. Apr 62.
Order from BISI £5 BISI-2727

Trans. of #Stal' (USSR) 1961, [v. 21] Sbornik Statei, p. 335-353.

DESCRIPTORS: *Pipes, Sizing, *Rolling mills, Manufacturing methods, Drawing (Machine processing).

Kermes, J.
A MACHINE FOR TESTING MATERIALS AT HIGH LOADING SPEEDS. Feb 62.
Order from MT $20.00 MT Trans-204

Trans. of Strojirenstvi (Czechoslovakia) 1961, v. 11, no. 6, p. 449-453.

DESCRIPTORS: *Materials, Test equipment, *Machines, Loading.

Nürnberg, W.
ANALYSIS OF ELECTRICAL OPERATING TESTS ON A TANDEM COLD ROLLING MILL. Apr 62.
Order from BISI £9 5s BISI-2582

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, 23 Nov, p. 1618-1632.

DESCRIPTORS: *Rolling mills, *Industrial equipment, Tests, Electrical equipment.

Engines and Propulsion Systems

PRIMING OR COMBUSTIBLE FLUID FOR INTERNAL COMBUSTION OR DIESEL ENGINES INTENDED TO BE EXPELLED FROM A PRESSURIZED CONTAINER BY A PROPELLANT GAS, tr. by E. B. F. 23 Mar 62, 10p. 4 refs.
Order from OTS or SLA $1.10 62-24521

Trans. of Norwegian patent 98,287, cl. $46c^5$ -8, by Spray Products Corp. (U. S. A.) pat. from 27 July 59, granted 13 May 61, pub. 10 July 61.

DESCRIPTORS: *Internal combustion engines, *Diesel engines, *Engine primers, Primers, Combustion, Fluids, Pressure, Propellants, Gases.

Anempodistov, V. P., Kasharskii, E. G., and Urusov, I. D.
PROBLEMS IN THE CONSTRUCTION OF LARGE TURBO-ALTERNATORS. [1961] [94]p. 38 refs.
[DSIR[NLL M. 2704.
Order from OTS or SLA $8.60 61-23532

Trans. of mono. [Problemy Krupnogo Turbogeneratoro -Stroeniya, Moscow] 1960 [73p.].

DESCRIPTORS: *Turbines, *Generators, Construction, Load distribution, Cooling, Mechanical properties, Vibration, Design.

Berenshtein, M. G. and others.
CONTROL SYSTEM OF A NEW SERIES OF MEDIUM-CAPACITY TURBINES (Sistema Regulirovaniya Novoi Serii Turbin Srednei Moshchnosti) tr. by D. R. H. Phillips. 29 Sep 61 [9]p. (8 figs. omitted). Trafford Park trans. no. 2970; NLL M. 3587.
Order from OTS or SLA $1.10 62-24674

Trans. of Teploenergetika (USSR) 1957 [v. 4] no. 1, p. 3-8.

DESCRIPTORS: *Turbines, *Control systems, Circuits, Construction, Pumps, Velocity, Pressure regulators, Servo motors, Control, Tests.

Contents: Basic circuit and construction; Pump-injector group; Speed governing; Pressure Regulation; Servomotors; Control and protection; Results of preliminary tests.

Deich, M. E. and Filippov, G. A.
DESIGN OF TURBINE STAGES WITH LONG BLADES AND VARIABLE PROFILE. [1962] [10]p. 4 refs.
NLL M. 3574.
Order from OTS or SLA $1.10 62-24686

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 9, p. 60-65.

DESCRIPTORS: *Turbines, *Turbine blades, Turbine stators, Design, Operation.

A method is given of solving parameters for the space between the stator and rotor blades, taking into account the inclination of the blade edges, curvature of the flow line and the annular section of the flow path. The design of a stage with a small d/l will be more accurate if consideration is given to the curvature of the flow line, the annulus, inclination of the trailing edges of the blades and introduce a test coefficient.

Variable outlet angle α_1 and inclined trailing edges will increase the efficiency at tip and root in the stages with long blades. This will ensure the selection of the optimum triangles of velocity and thus increase the efficiency of the stage.

Doroshenko, S. N. and Kotlyarov, V. V.
BASIC TRENDS IN PISTON CONSTRUCTION FOR HEAVY DUTY HIGH SPEED DIESELS. [1962] [4]p.
NLL M. 3576.
Order from OTS or SLA $1.10 62-24684

Trans. of Energomash[inostroenie] (USSR) 1961, v. 7, no. 4, p. 42-44.

DESCRIPTORS: *Diesel engines, *Pistons, Engine cylinders, Construction, Tests.

Fedorov, M. F. and Garkusha, A. V.
EFFECT OF THE GUIDE BLADE CHORD ON THE CHARACTERISTICS OF A TURBINE STAGE (O Vliyanii Khordy Napravlyayushchikh Lopatok na Kharakteristiki Stupeni Turbiny) tr. by D. R. H. Phillips. 3 Oct 61 [11]p. Trafford Park trans. no. 3025; NLL M. 3597.
Order from OTS or SLA $1.60 62-24666

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 4, p. 37-41.

DESCRIPTORS: *Turbines, Operation, *Turbine blades, Design, Tests.

An examination is made of the effect of the guide blade chord on the efficiency and other characteristics, based on the results of tests on stage designs with different degrees of reaction and variable closed and open axial clearances.

Fellner, G.
ANALYSIS AND APPLICATIONS OF THE TWO-CYCLE (BYPASS) JET ENGINE. Abridged version of paper read at WGL Conference, Stuttgart, 10 Oct 58. 1958 [43]p. F-TS-9921.
Order from OTS or SLA $4.60 60-13105

Trans. of mono. Analyse und Anwendungsbereich des Zweikreistriebwerks, pub. by Inst. for Jet Propulsion and Gas Turbines of the German Research Organization for Aeronautics, 1958.

DESCRIPTORS: *Jet engines, Fuel consumption, *Flight speeds, Economics, Thrust, Tests.

Within a certain range of low and medium flight speeds the two-cycle, or bypass, jet engine can effect a considerable decrease in specific fuel consumption. The economy of this type of engine depends primarily on the thrust ratio of the mass flows, and consequently on the exhaust velocities of the two cycles. It is shown that there must be a definite ratio between these two exhaust velocities for proper engine design from an economic and thermodynamic standpoint, and specifically in order to make full use of the enlarged engine body cross section and overcome the corresponding increase in engine resistance and inlet losses. The optimum value of this exhaust velocity ratio is the s same for all flight speeds, for all mass ratios (bypass ratios) and for whatever cycle process factors are used, and will depend only on the efficiencies of the compressor and the turbine. The calculation procedure for the bypass engine leads to formulas that are relatively simple. These formulas make it possible to represent the efficiency improvement and thrust reduction in comparison with a single-cycle engine of similar design, in definite form and independent of any special cycle process factors. On this basis the effect is considered of the various factors and the possibility of lowering the parameters, and the results are presented in a simplified graphic form. Conclusions are summarized in eight principles for two-cycle jet engines. (Author)

Pichugin, D. F.
AN ANALYSIS OF THE OPERATION OF A DRY-FRICTION DAMPER FOR REDUCING SHAFT VIBRATION DURING TRANSITION THROUGH CRITICAL SPEEDS. [1962] [8]p. 4 refs. C. E. Trans. 2145; NLL M 4798.
Order from OTS or SLA $1.10 62-24858

Trans. of Izv[estiya] Vys[shikh] Uchebnykh Zaved[enii]. Aviats[ionnaya] Tekhn[ika] (USSR) 1958, no. 1, p. 150-157.

DESCRIPTORS: *Gas turbines, Turbines, Shafts, Vibration, Reduction, Damping, Velocity.

A theoretical examination of the question of the operation of a dry-friction damper shows that it would be possible to effect a considerable reduction in shaft vibration during transition through the critical speed by using such a damper suitably set. A disadvantage of this type of damper, however, is its sensitivity to c changes in unbalance. Thus, for an unbalance a_1 and a value of $\Delta_1 = \frac{f}{a_1} = 0.9$, the shaft deflection will be $r1 = \frac{a1}{2\zeta}(1 - \Delta_1) = 0.1 \frac{a_1}{2\zeta}$. If the unbalance is doubled ($a_2 = 2a_1$), the ratio Δ is halved ($\Delta_2 = \frac{\Delta_1}{2}$), and the shaft deflection will be 11 times greater: $r_2 = \frac{a_2}{2\zeta}(1 - \Delta_2) = \frac{2a_1}{2\zeta}(1 - \frac{\Delta_1}{2}) = 1.1 \frac{a_1}{2\zeta}$
Experiments carried out with a model of the dry-friction damper have, in the main, confirmed the theoretical conclusions. (Author)

Strunkin, V. A.
VIBRATIONS OF NON-UNIFORMLY HEATED TURBINE DISCS. [1962] [7]p. 4 refs. C. E. Trans. 2146; NLL M. 4776.
Order from OTS or SLA $1.10 62-24241

Trans. of Izv[estiya] Vyss[hikh] Uchebnykh Zaved[enii]. Aviats[ionnaya] Tekhn[ika] (USSR) 1958, no. 1, p. 165-170.

DESCRIPTORS: *Gas turbine disks, Disks, Vibration, Temperature, Rotation, Turbines.

The fan-like vibrations of rotating, non-uniformly heated discs of constant thickness are examined. The problem is solved by the energy method. (Author)

Machine Parts and Mechanisms

CONVENTIONAL DRAWINGS OF GEAR AND CHAIN TRANSMISSIONS. [1962] [3]p. (21 figs. omitted). [DSIR] NLL M 3313.
Order from OTS or SLA $1.10 62-23903

Trans. of [Russian State] Standard GOST 3460-59 (replaces GOST 3460-52) gr. G01, effective 1 Jan 60.

DESCRIPTORS: Drafting, *Transmission gears, *Gears, Standards, *Drive chains, Machines.

Bendryshev, O. L.
ONE OF THE REASONS FOR "SPONTANEOUS" FAILURE OF BOLTS. Feb 62.
Order from BISI £3 5s BISI-2430

Trans. of Vestnik Mashin[ostroeniya] (USSR) 1950 [v. 30] no. 15, p. 17-18.

DESCRIPTORS: *Bolts, Failure (Mechanics) Steel, Aging.

Bitsuta, V. K.
SOME MATHEMATICAL RELATIONSHIPS ON THE PENETRATION OF PRISMATICALLY SHAPED TEETH INTO A PLASTIC BODY. [1962] 5p.
Order from ATS $6.55 ATS-98P58R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 7, p. 29-33.

DESCRIPTORS: *Plastics, Deformation, Penetration, Mathematical analysis.

Kawazaki, Y.
INVESTIGATION OF AIR BEARINGS. [1961] 9p. 4 refs.
Order from SLA $1.10 61-10660

Trans. of [Seimitsu Kikai] (Japan) 1947, v. 13 [p. 5-7].

DESCRIPTORS: *Bearings, *Gas bearings, *Lubrication, Mathematical analysis.

The theories for hemispherical and circular plate bearings are discussed briefly, and fundamental properties are experimentally verified. With respect to the friction of bearing rotation, stability of bearing action and other important operation properties this bearing is much superior to others. (Author)

Mikulla, L.
THE BEHAVIOUR OF SYNTHETIC RESIN BONDED FABRIC BEARINGS WITH PLAIN AND SPLIT HALF LINING IN COMPARISON WITH PLAIN METAL BEARINGS. Apr 62.
Order from BISI £2 15s BISI-2579

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, 9 Nov, p. 1527-1529.

DESCRIPTORS: *Bearings, *Materials, *Plastics, *Laminates.

Volkov, M. M.
COLD THREAD ROLLING ON LONG SCREWS. May 62.
Order from BISI £3 15s BISI-2696

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961, v. 3, no. 4, p. 1-5.

DESCRIPTORS: *Screw threads, *Metal screws, Rolling mills.

Wenger, Ernst.
ANALYSIS OF THE BEHAVIOUR OF SYNTHETIC RESIN COMPOSITION BEARINGS WORKING IN A 700 mm THREE-HIGH BILLET AND SHEET MILL.
Apr 62.
Order from BISI £5 10s BISI-2578

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, 9 Nov, p. 1519-1526.

DESCRIPTORS: *Industrial equipment, *Bearings, Lubrication, Cooling, Friction, *Plastics.

Manufacturing Equipment and Processes

INDUSTRIAL LABORATORY, 1961, VOL. 27, NO. 4: SELECTED ARTICLES. 22 Mar 62 [18]p. JPRS: 13152.
Order from OTS or SLA $1.60 62-23582

Trans. of #Zavodskaya Laboratoriya (USSR) 1961, v. 27, no. 4, p. 490-491, 622-625, 629-630.

DESCRIPTORS: *Laboratories, *Industrial plants, Conferences, *Chemical industry, Organic compounds, Control, *Metallurgical laboratories, *Iron, *Ores, Metallurgical analysis, *Tractors, *Machine tools, *Hydraulic presses, *Fertilizers, Production, *Agricultural machinery.

Contents:
Conference on the methods of control in the organic chemical industry, by A. A. Cherkasskii
Conference on rapid methods of analysis of iron ores and nonmetallic metallurgical raw materials, by Yu. S. Kuznetsov
Research work in the industrial laboratory of the Chelyabinsk Tractor Plant, by A. N. Lenkov
In the central laboratory of the Novosibinsk "Tyazhstankogidropress" Plant im. A. I. Efremov, by I. A. Vashikov
In the central laboratory of the Voskresensk Chemical Combine, by T. G. Repenkova
In the central laboratory of the Lyubertsy Agricultural Machine Plant im. Ukhtomskii, by E. P. Ivanova.

MACHINES FOR THE PRODUCTION OF WIRES, ROPES AND CABLES. [1962] 14p.
Order from STT $6.00 STT-146-167

Trans. of [Draht] (West Germany) 1960, v. 11, no. 12, p. 739-743.

DESCRIPTORS: *Wire, *Cordage, Machines, Production.

Chelyustkin, A. B. and Ivanov, V. A.
A SELF-ADJUSTING SYSTEM OF AUTOMATIC CONTROL OF ELECTRIC PIPE-WELDING MILLS.
13 Mar 62 [28]p. 6 refs. JPRS: 12929.
Order from OTS or SLA $2.60 62-23425

Trans. of Elektrichestvo (USSR) 1960, no. 2, p. 13-18. Another trans. is available from PP $14.00 (1960, v. 5, p. 1-169).

DESCRIPTORS: *Welding, *Electric welding, *Pipes, Control systems, Automatic, Computers.

A method in which such a correction takes place by way of an investigation of the so-called pseudo-cross-correlation function $\varphi(t) = \int_0^t x(t) \cdot f(t - \tau)dt$, is discussed. Here τ is the retardation time, f(t) is the disturbance. It follows from the formula that if the invariance condition is fulfilled, the function $\varphi(t)$ assumes a finite stable value. This method, compared with others, shows a high degree of immunity from disturbance. In a great number of control objects, the transmission factor is the only variable parameter of the characteristic, while the transmission function itself remains practically constant. A tube with different ohmic and inductive resistance can be welded at unchanged time constants of the control circuit for the welding current. The task of the self-tuning consists here in adjusting the nominal value of the transmission factor, which corresponds to the transmission factor of the object, in the compensating computing device.

Dorn, Walter, Reger, Karl, and Rühle, Rudolf.
REFLECTOR MANUFACTURING PROCESS, tr. by P. C. C. 8 Mar 62, 6p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-23733

Trans. of German patent 720,870, cl. 48b, gr. 11/03, by Robert Bosch G. m. b. H., pat. from 25 Feb 37, grant announced 16 Apr 42, pub. 18 May 42.

DESCRIPTORS: *Reflectors, Manufacturing methods, Surfaces, Metals, Vapors, Precipitation, Vacuum apparatus, Pressure.

The reflecting surface is produced by precipitating metal vapors onto a base in a vacuum or at very low gas pressures. The mirror base is provided with a high natural gloss coating, consisting more particularly of lacquer, prior to the application of the reflecting metal surface.

Gendorf, Hilda Friedrich.
PROCESS FOR MAINTAINING THE MOISTURE IN DIFFICULTLY WETTABLE TOBACCOS, PARTICULARLY ORIENTAL TOBACCOS, BY MEANS OF BIVALENT ALCOHOLS. [1962].
Order from K-H $5.00 K-H 10920-b

Trans. of [German] patent application 1,056,990 (F 24971 IVa/79c) cl. 79c 1, internat. cl. A 24 b [1959].

DESCRIPTORS: *Tobacco, Moisture, *Alcohols, Wetting agents.

Guinet, Eugene-Auguste.
CLOSURE FOR ANY RECEPTACLE, tr. by J. R-P. 5 Apr 62, 2p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-24502

Trans. of French patent 1,050,249, gr. 20, cl. 4, appl. filed 6 Feb 52, granted 26 Aug 53, pub. 6 Jan 54.

DESCRIPTORS: *Containers, Design, Materials, Packaging.

A special groove arrangement grips and pinches the opening of the receptacle in the course of being forced down, without fitting the entire edge exactly, causing the formation of two unbroken rings sealing the sides of the groove angle against impact, and of one or two circular compression chambers on the rim and around the rim respectively of the receptacle.

Grinberg, S. A.
PRODUCTION OF TUBES WITH INTERNAL PLASTIC COATING. [1959] [7]p. BISI Trans. 1466; NLL M. 4875.
Order from OTS or SLA $1.10 62-25326

Trans. of Stal' (USSR) 1958 [v. 18] no. 11, p. 1018-1020.
Another trans. is available from BISI £3 as BISI-1466 [1959].

DESCRIPTORS: *Pipes, *Plastic tubing, Production, Economics, Corrosion, Steel tubing.

The process for manufacturing plastic-lined tubes (by means of polymerized welding - without drawing), developed at our works, makes it possible to replace the costly alloyed steel tubes by these plastic lined tubes in a number of branches of industry, in which corrosive fluids are conveyed. (Author)

Kontorov, B. M. and Popova, N. V.
WEAR RESISTANT SURFACE LAYER WELDING USING A HORIZONTAL PLATE ELECTRODE. [1960] 10p.
Order from OTS or SLA $1.10 62-14189

Trans. of #Svarochnoe Proizvodstvo (USSR) 1959, no. 9, p. 27-30.
Another trans. is available from BISI £2 5s as BISI-1629 [1960].

DESCRIPTORS: *Welding, *Electrodes, Surfaces, Friction.

Scheffels, W.
MATERIALS PROCESSING WITH HIGH-INTENSITY ELECTRON BEAMS. [1962] 8p. (12 figs. 1 table omitted).
Order from SLA $1.10 62-16189

Trans. of Draht (West Germany) 1961, v. 12, no. 8, p. 352-356.

DESCRIPTORS: Materials, Processing, *Electron beams, Welding, Electric welding, Milling machines, Drilling machines, Machines.

Stepanov, A. V.
A NEW METHOD OF PRODUCING MANUFACTURED ARTICLES DIRECTLY FROM A MELT. [1960] [5]p.
Order from OTS or SLA $1.10 62-14679

Trans. of #Vestnik Mashinostroeniya (USSR) 1959, v. 39, no. 11, p. 47-[50].
Another trans. is available from BISI £3 5s as BISI-1638 [1960].

DESCRIPTORS: *Castings, Production, Liquid metals, Phase studies, Crystallization.

Transport, Traction and Hoist Facilities

Ivanov, Yu.
NEW METHODS OF CHECKING STEERING WHEEL EFFICIENCY (Novye Metody Otsenki Tekhnicheskogo Sostoeniya Rulevogo Uprevleniya) tr. by R. C. Halsall. [1961] [5]p. (foreign text included). Library communication no. 889; [DSIR NLL] M. 2936.
Order from OTS or SLA $1.10 61-23343

Abbreviated trans. of Avtom[obil'nyi] Transp[ort] (USSR) 1959, v. 37, no. 9, p. 13-15.

Portions of this report will not reproduce well.

DESCRIPTORS: *Vehicle wheels, Guidance, Transportation, Automotive industry.

Khoroz, V. I., Petrov, and Shelukhin.
ESTIMATE OF WHEEL COHESION WITH SUPPORTING SURFACE (Otsenka Steepleniya Kolesa s Opornoi Poverkhnost'yu) tr. by H. H. 25 Jan 62, 11p. I-0744.
Order from OTS $0.50 62-11668

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1961 [v. 27, no. 4] p. 8-12.

DESCRIPTORS: *Vehicle wheels, Tires, *Roads, Soils, *Trafficability, Determination.

On hard, supporting surfaces there is no difference when determining the coefficients of cohesion by moment or force of traction in a case of complete wheel slippage. The coefficient of cohesion of skidding wheel, computed by the force of traction on its axis is less than the real coefficient of cohesion (computed by moment) by an amount due to the resistance of rolling. On soft ground the real value of the coefficient of cohesion should be defined by the value of the moment applied to the wheel axle. In order to determine it, it is necessary to know the form and outline of the deformed surface of the tire in contact, the properties of the soil, the wheel load, and the magnitude of the moment applied to the axle of the wheel. The coefficient of cohesion by traction can differ considerably from the coefficient of cohesion determined by moment. In the case of tires with sharply defined ground cleats, the cohesion is determined, in the main, by the forces of shearing, and in the case of saturated tread designs --by the force of friction of tire against the ground or ground against ground. With an increase in the diameter of the wheel there is a decrease in the cohesive force component spent on the deformation of the ground

In a case of tires with widely disposed ground cleats rolling along soft ground, the value of the coefficient of cohesion depends linearly on the ratio of the area of the surface of contact to the load on the wheel. (Author)

MATERIALS

Lehnert, Lothar H.
DEVELOPMENT OF STANDARD TESTING METHODS FOR HOLLOW GLASS VESSELS (Entwicklung von Normprüfverfahren für Hohlglasgefässe). [Paper presented] at the Glass Technology Meeting (no. 30) Tübingen, 16 May 56. (foreign text included) 14 refs.
Order from SLA $1.60 62-14869

Trans. of Glastechnische Berichte (West Germany) 1956, v. 29, no. 8, p. 314-318.

DESCRIPTORS: *Glass, Containers, Test methods, Standards, Quality control, *Pressure vessels, Materials.

Marschall, H. J.
NON-DESTRUCTIVE [MATERIALS] TESTING, MAGNETIC PARTICLE INSPECTION. III. INNOVATIONS. [1960] [6]p. 3 refs.
Order from SLA $1.10 62-14661

Trans. of Archiv für Technisches Messen [und Industrielle Messtechnik] (West Germany) 1959, v. 283, no. V91-3, Aug, p. 161-164.
Another trans. is available from BISI £3 10s as BISI-1590 [1960].

DESCRIPTORS: *Materials, Test methods, *Nondestructive testing, *Particles, Magnetic properties

Testing instruments are described.

Möhler, Karl.
CEMENTING OF STEEL WITH PLASTIC ADHESIVES. [1960] [15]p. 9 refs.
Order from SLA $1.60 62-14524

Trans. of Verein Deutscher Ingenieure. [Zeitschrift] (West Germany) 1959, v. 101, no. 1, p. 1-8.
Other trans. are available from SLA $1.60 as 61-20944, 9 Feb 59 [17]p. (partly abridged) and from BISI £6 as BISI-1648 [1960].

DESCRIPTORS: *Steel, Bonding, *Resin adhesives, Joints, Bridges, Pipes, Traffic, Foundations (Structures), Adhesives

For abstract see Technical Translations 7: 286, 1962.

Nekhendzi, E. Yu.
SEARCH FOR HEAT-RESISTANT CEMENTS WITH IMPROVED ELECTRICAL INSULATING PROPERTIES BASED ON WATER GLASS. [1962] 9p.
Order from ATS $12.00 ATS-91P59R

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961 v. 34, no. 12, p. 2613-2622.

DESCRIPTORS: *Cements, Refractory materials, Electric insulation.

Shishorina, O. I.
AN EXPERIMENTAL VERIFICATION OF THE SUPERPOSITION METHOD FOR SOLVING STRESS CONCENTRATION PROBLEMS (Eksperimental'naya Proverka Metoda Nalozhoniya dlya Resheniya Zadach o Kontsentratsii Napryazhenii) tr. by L. Meyer. Apr 61 [12]p. 11 refs. S. M. R. E. Trans. no. 4502; NLL M. 3349.
Order from OTS or SLA $1.60 62-24907

Trans. of Problemy Prochnosti v Mashinostroenii (USSR) 1959, v. 4, p. 47-60.

DESCRIPTORS: *Photoelastic materials, Epoxy resins, Resins, *Stresses, Elasticity, Experimental data, Numerical analysis.

It was verified experimentally that approximate solutions of stress concentration problems, obtained by the superposition of known contour functions can be applied in practice. A new photo-elastic material ED-6M based on epoxy resin possesses the essential properties for an examination of stress concentrations of a high order. (Author) (See also 60-17372)

Sigwart, Hans.
CONCERNING THE TESTING OF INTERNAL PRESSURE OF GLASS BOTTLES (Zur Innendruckprüfing von Glasflaschen). [1962] [39]p. (foreign text included) 9 refs.
Order from SLA $3.60 62-14887

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1952, v. 25, no. 9, p. 276-285.

DESCRIPTORS: *Glass, Containers, Test equipment, *Pressure vessels, Materials, Statistical analysis.

The purpose of the examinations was the preparation of a norm in this field by comparing the testing processes used until now, and developing a testing device with test conditions which could be defined as exactly as possible. (Author)

Ceramics and Refractories

Angenot, P.
TECHNIQUE OF MICROANALYSIS OF "BLEBS" IN GLASS. [1962] 6p. 1 ref.
Order from SLA $1.10 62-14864

Trans. of Chimie et Industrie (France) [1950, v. 63, no. 3 bis] p. 396-397.

DESCRIPTORS: *Glass, *Bubbles, Microanalysis, Microstructure, Reagents, Chemical reactions.

Becker, Kurt.
WASTE HEAT BOILERS FOR GLASS MELTING TANKS. [1962] 7p. (13 figs. omitted).
Order from SLA $1.10 62-14248

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1959, v. 32, no. 6, p. 243-246.

DESCRIPTORS: *Glass, Melting, *Tanks, *Boilers, Heat transfer, Design.

Beznosikova, A. V. and Poluboyarinov, D. N.
TO THE PROCESS OF THE FORMATION OF 'SECONDARY' MULLITE. [1961] 7p. 8 refs. MDF B-111.
Order from OTS $0.50 62-11237

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 4, p. 761-764.

DESCRIPTORS: *Mullite, Synthesis, Temperature, Aluminum compounds, Silicon compounds, Oxides, Clay Quartz, Crystallization.

The investigation was undertaken to the temperature of the emergence and the completion of the formation of mullite during the interaction of artificial aluminum oxide and silicon oxide from the natural raw material (clays, quartzes, et al.). The variations of the phase diagram of the mixture which occurs during roasting (emergence of mullite and vanishing of the carborundum and cristobalite) were established by the x-ray analysis method. The investigation established that the temperature of the emergence and of the completion of the formation of the mullite is practically independent of the preliminary heat treatment of the aluminum oxide. The nature of the mixture components of synthetic mullite exerts no decisive influence on the temperature of mullite formation. The presence of flux contributes to mullite formation. The known variations in the dispersion of finely-crushed raw material exert no essential influence on the mullitization process. The tile sintering starts after the completion of the mullite formation. During sintering, the mullite crystals grow from a size less than 1 μ up to 10 μ. The sizes of the mullite crystals for sintered tile based on clayey materials are larger than those based on quartz or on silicon oxide.

Danzin, André.
APPROXIMATE CALCULATIONS OF ELECTRICAL RESISTIVITY OF SILICATE (Calcul Approché de la Résistivité Électrique des Verres Silicatés). [1962] [6]p. (foreign text included) 2 refs.
Order from SLA $1.10 62-14868

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] 1949, v. 228, p. 487-489 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Silicates, Resistance, Numerical analysis, Glass, Transformations, Dielectric properties.

Lengyel, Bela, Dobos, Sandor, and Till, Ferenc.
METHOD OF DETERMINING THE RATE OF SOLUTION OF GLASSES BY USING A FLAME PHOTOMETER OF HIGH SENSITIVITY. 26 Aug 60, 13p. (12 figs. omitted) 28 refs.
Order from SLA $1.60 62-14216

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 6, p. 206-213.

DESCRIPTORS: *Glass, Solubility, Determination, *Flames, *Spectrophotometers, Photometers.

Mamykin [P. S.].
BASIC BRICKS: RUSSIAN FORSTERITE, tr. by R. Sewell. Jan 57 [11]p. [NLL] M401.
Order from OTS or SLA $1.60 59-22469

Partial trans. of mono. Refractory Materials, Sverdlovsk, 1956.

DESCRIPTORS: *Brick, Refractory materials, Grains (Metallurgy), Inclusion, Chemical analysis

Forsterite bricks can be determined (sic) as refractory parts belonging to the system $MgO-Fe_2O_3-SiO_2$, in which the basic oxides are bonded in the forsterite and magnesio-forsterite in a particular way in mutual distribution (sic) so that the magnesio-ferrite, which is present in a relatively small quantity, does not serve as a bond in the brick and the properties of the ceramic part are determined by the crystalline growth of the basic phase forsterite. Forsterite refractory parts can be produced from olivinites, dunites, serpentinites and talcs. However, these various types of raw material are not of equal value. (Extracted)

Schumacher, Leo and Schwiete, Hans-Ernst.
CONTRIBUTION TO THE STUDY OF ALKALI ATTACK ON FIREPOLISHED GLASS SURFACES (Beitrag zum Laugenangriff auf Feuerpolierte Glasoberflächen). [1962] [23]p. (foreign text included) 10 refs.
Order from SLA $2.60 62-14490

Trans. of Glastechnische Berichte (West Germany) 1960, v. 33, no. 1, p. 1-7.

DESCRIPTORS: *Glass, *Surfaces, Gravimetric analysis, Sodium compounds, Hydroxides, Corrosion, Reagents.

These studies are concerned with the alkali attack on glass surfaces. This is carried out by weighing the test samples periodically and observing by the microscope. The microscopic studies confirm the assumption that the appearance of alkali attack closely resembles that of hydrofluoric acid attack. The destruction of the glass surface by pitting is common in all types of attack. Larger pit diameters are shown on the F-side than on the B-side of the glass sample. However the rate of hydrofluoric acid attack is about 100 times that of the alkali attack. The kinetic constants computed from the studies are identical to these already published by other authors. (Author)

Sovegjarto, J.
UP-TO-DATE BASIC-REFRACTORY BRICKS. Mar 62.
Order from BISI &7 BISI-2352

Trans. of Koh[aszati] Lapok (Hungary) 1960 [v. 15](93) Feb, p. 68-72 and Mar, p. 114-117.

DESCRIPTORS: *Brick, Refractory materials.

Stepanenko, M. G. and Tomashevich, I. O.
SOME OPERATING RESULTS OF SKP COMBINATION FURNACE (Nekotorye Itogi Raboty Kombinirovannoi Pechi "SKP"). [1962] [10]p. (foreign text included).
Order from OTS or SLA $1.10 62-10926

Trans. of Legkaya Prom[yshlennost'] (USSR) 1948, v. 8, no. 5, p. 22-24.

DESCRIPTORS: *Glass, Processing, *Heating plants, Industrial production.

Thomas, M.
THE SCHLIEREN (STREAK) FORMATION IN GLASSES CAUSED BY REFRACTORIES (Uber die Schlierenbildung in Glasern durch Feuerfeste Massen). [1962] [17]p. (foreign text included) 2 refs.
Order from SLA $1.60 62-14882

Trans. of Glastechnische Berichte (West Germany) 1942, v. 20, no. 9, p. 258-262.

DESCRIPTORS: *Glass, *Refractory materials, Clays, *Schlieren photography, Refractive index.

Tests are reported on refractories, especially on burnt clays with respect to the schlieren (streak) formation they cause in the molten glass they are in contact with, which tests have found satisfactory application in the selection of refractories for vat bricks and glass house pots in planned constructions. (Author)

Trier, Wolfgang.
GLASS FLOWS: THEIR SIGNIFICANCE AND MEASUREMENT. 26 Jan 61, 18p. (14 figs. omitted) 22 refs.
Order from SLA $1.60 62-14240

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 11, p. 401-411.

DESCRIPTORS: *Glass, Melting, Tanks, Measurement, *Flowmeters.

Fuels, Lubricants, and Hydraulic Fluids

PROPELLANT FLUID FOR STARTING INTERNAL COMBUSTION ENGINES, tr. by L. A. N. 2 Apr 62, 17p. (3 figs. omitted) 1 ref.
Order from OTS or SLA $1.60 62-24509

Trans. of French patent 1,232,050, internat. cl. C 10 1 and F 02 d, by Sprays Products Corp., U.S.A appl. 5 Aug 59, granted 19 Apr 60, pub. 5 Oct 60.
DESCRIPTORS: *Internal combustion engines, Starting, *Gaseous rocket propellants, *Engine primers, *Liquid rocket propellants.

Bogoyavlenskii, V. V. and Petrenko, V. G.
DETERMINATION OF THE RESISTANCE OF COALS TO OXIDATION, tr. by S. Dobrianskyj. Jan 61 [11]p. 4 refs. CRL/T. 542; NLL M. 3344.
Order from OTS or SLA $1.60 62-23935

Trans. of Koks i Khimiya (USSR) 1957, no. 2, p. 3-7.

DESCRIPTORS: *Coal, *Oxidation, Resistance, Determination.

The method of the determination of the resistance of coals to oxidation was studied on a laboratory scale. Supported by two indices (duration of induction period and rate of oxygen absorption). This method differentiates coals according to the degree of their resistance to oxidation. A long duration of induction period is accompanied by reduced losses of the coking properties of coals during prolonged storage. (Author)

Gol'dfel'd, S. M. and Vaisbut, A. M.
IMPROVEMENT IN OIL FILTERING BY MEANS OF A CENTRIFUGE AND MAGNETIC SEPARATOR (Uluchshenie Ochistki Masla Tsentrifugoi s Dopolnitel' nym Magnitnym Separatorom) tr. by M. E. 2 May 62, 5p. 2 refs. I-0067.
Order from OTS or SLA $1.10 62-25323

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1961 [v. 27] no. 4, p. 12-14.

DESCRIPTORS: *Oil filters, *Centrifuges, Internal combustion engines, Magnetic separation.

Pampuch, Roman.
TESTS ON MILD HYDROGENATION OF COALS WITH COKE-OVEN GAS (Badania nad Lagodnym Uwodornianiem Wegli Gazem Koksowniczm) tr. by I. Dmowski. 1962 [29]p. 34 refs. PL-480 Int.
Order from OTS $0.50 60-21355

Trans. of Glowny Institut Gornictwa. [Kommunikat] (Poland) 1950, no. 69, p. 1-14.

DESCRIPTORS: *Coal, *Hydrogenation, Plasticity, Temperature, *Coal gas, Gases, Tests, Fuels.

The optimum conditions were sought for hydrogenation with coke-oven gas. Hydrogen partly reacts with the other components of coke-oven gas, in accordance with the Hilditch-Armstrong reaction. The addition of 10 to 20% of water prevents the development of this reaction by removing carbon monoxide according to water-gas reaction. The effect of the addition of water depends mainly on the action of water vapor upon the solid phase. The optimum temperatures of hydrogenation with coke-oven gas lie within the range of 380° to 400°C. The increase of hydrogen content in coke-oven gas from 50 to 70% significantly improves the final results of hydrogenation. Two nonsintering coals (type "31") from the Upper-Silesian Coal Basin were hydrogenated at 380° to 390°C, during 6 hours, and at an initial gas pressure of 110 kg/sq cm (at 18°C). Coke-oven gas with a 70% hydrogen content was applied; 20% of water was added to the coals. These coals after hydrogenation show an increase of the sintering number, a decrease of the maximum temperature of plasticity

(according to Gieseler) with a broadening of the limits of plasticity. The elemental carbon and volatile matter contents both increase with hydrogenation degree. Under these conditions the hydrogenation reaction yields only an insignificant quantities of liquid and gaseous products.

Scheinberg, S. A.
GAS LUBRICATION OF SLIDING BEARINGS: THEORY AND CALCULATIONS. [1961] [116]p. 12 refs.
Order from OTS or SLA $9.60 61-20917

Trans. of [Trenie i Iznos v Mashinakh] (USSR) 1953, v. 8, p. 107-204

DESCRIPTORS: Shafts, *Bearings, Separation, *Lubrication, *Gases, Air, Machines, Construction.

There is derived, on the basis of the study of the lubricating characteristics of gases, the equation of spatial flow of a gas lubricant. The problem of the lubrication of bearings of infinite length (that is, the plane problem) is solved The obtained solutions are extended with the help of certain assumptions to real bearings of finite length. Finally, there is described the method of calculation of gas lubrication of bearings, and its results are verified experimentally. (Author)

Schultze, G. R. and Göttner, G. H.
LUBRICATING GREASES AND THEIR TESTING: A CRITICAL ANALYSIS OF TESTING PROCEDURES (Schmierfette und Ihre Prüfung: ein Beitrag zur Kritischen Analyse der Schmierfett-Prüfverfahren) tr. by D. A. Sinclair. 1962, 26p. 23 refs. NRCC Technical Trans. 1014.
Order from NRCC $1.50 NRCC C-3957

Trans. of Materialprüfung (West Germany) 1961, v. 3, no. 11, p. 402-409.

DESCRIPTORS: *Lubrication, *Greases, Test methods.

Sharonov, G.
BREAKING IN ENGINES USING OILS WITH SULFUR ADDITIVES (Prirabotka Dvigatelei na Maslaka s Prisadkoi Sery). 15 Mar 62, 5p. I-0849; JPRS (R-2157-D).
Order from OTS $0.50 62-11675

Trans. of Avtomobil'nyi Transport (USSR) 1961 [v. 39] no. 6, p. 29-31.

DESCRIPTORS: Passenger vehicles, *Internal combustion engines, *Oils, *Additives, Molybdenum compounds, Barium compounds, *Sulfides, Automotive industry, *Sulfur.

Experiments in breaking in engines using MK-22 oils with 0.6% molybdenum sulfide and AK-10 with varying amounts of IP-22 barium additive have shown that they retard the breaking-in process. The experience of the Gor'kiy automotive plant established that putting 1.5% of TsIATIM-5 additive into Industrial 12 oil had no effect on the quality of the breaking in of engines. Since sulfur is in a chemical compound with metals (molybdenum, barium, and others), it reacts only slightly with working surfaces forming a very thin and stable layer on them through adsorption. Because of this, parts using similar additives undergo little change in microgeometry, roughness, chemical composition of the upper layer, and wear and tear. The contact area where the parts touch increases very slowly. (Extracted)

Leather and Textiles

Kharitonova, V. P., Babenkov, L. N., Pakshver, A. B.
THE EFFECT OF THE AMOUNT OF COMBINED ACETIC ACID IN CELLULOSE ACETATE ON THE FILTERABILITY AND SPINNABILITY OF COMMERCIAL DOPES [Vliyanie Soderzhaniya Svyazannoi Uksusnoi Kisloty v Atsetiltsellyuloze na Fil'truemost' i Pryadomost' Proizvodstvennykh Rastvorov]. [1962] 5p.
Order from ATS $7.75 ATS-83P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1959, v. 2, no. 2, p. 254-257.

DESCRIPTORS: *Acetic acids, *Cellulose acetates, Solutions, *Fibers, Acetates, Textiles, Processing.

Palladov, S. S. and Sklyannikov, V. P.
A TESTING MACHINE FOR DETERMINING THE CREASE-RESISTANCE OF FIBER, YARN, AND FABRIC. [1962] 4p.
Order from ATS $7.55 ATS-10P61R

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 3, p. 48-49.

DESCRIPTORS: *Fibers, *Threads, *Textiles, Test equipment, Machines.

Trabun, M. A. and Prupis, M. A.
SPECIAL FINISHING OF BLENDED WOOL FABRICS (Spetsial'nye Otdelki Polusherstyanykh Tkanei) tr. by J. Hardy. [1962] [10]p. (foreign text included). [CSIRO] Trans. 5593.
Order from OTS or SLA $1.10 62-23719

Trans. of Tekstil'naya Promyshlennost' (USSR) 1961, v. 21, no. 4, p. 38-40.

DESCRIPTORS: *Woolen textiles, Processing, *Synthetic fibers, Moistureproofing, Elasticity, Textiles.

Special methods of finishing fabrics containing 50% or more of synthetic fibres are described. The waterproofing treatment for overcoat fabrics is based on the use of Chromolan preparations. Two new waterproofing preparations, Alumolan and Nilan, have been tested on an industrial scale.

Paints and Finishes

Hüttig, W.
OBSERVATIONS AND PRACTICE IN THE ENAMELLING OF ALUMINIUM AND ALUMINIUM ALLOYS.
May 62.
Order from BISI £2 BISI-2622

Trans. of Forschungsgesellschaft Blechverarbeitung e.V. Mitteilungen (Germany) 1961, no. 17, p. 218-223.

DESCRIPTORS: *Aluminum, *Aluminum alloys, *Enamel coatings.

Petrov, Yu.
AN INVESTIGATION OF THE QUALITY OF COATINGS OBTAINED BY ELECTROLYTIC DEPOSITION OF STEEL. [1962] 8p.
Order from ATS $12.65 ATS-93P60R

Trans. of [Avtomobil'nyi Transport] (USSR) 1951, v. 29, no. 2, p. 31-34.

DESCRIPTORS: *Coating, Quality control, *Steel, Electrodeposition, Antomotive industry.

Photographic Materials

Ipatov, V. A. and Pakhomov, L. P.
APPAREIL POUR LA DÉTERMINATION DE LA CONCENTRATION DES VAPEURS DE MERCURE DANS L'AIR [Fotoelektricheskii Pribor dlya Opredeleniya Kontsentratsii Parov Rtuti v Vozdukhe] [A Photoelectric Instrument for the Determination of the Concentration of Mercury Vapour in Air] tr. by Mlle Martin. 15 Dec 61 [12]p. 3 refs. CEA Trans. no. R 1447 (text in French).
Order from OTS or SLA $1.60 62-19007

Trans. in French of Prib[ory i] Tekh[nika] Eksper[imenta] (USSR) 1958, no. 2, p. 91-94.

DESCRIPTORS: *Electrophotography, *Photomultipliers, Measurement, *Mercury, *Vapors, Air, Absorption, Ultraviolet radiation, Transistors.

The instrument is based on the absorption by a vapour of ultraviolet radiation having a wavelength of 2537 Å. The intensity of the radiation is measured by a photomultiplier. The out-put of the photomultiplier is fed to an electric circuit which uses only diode and triode transistors. The circuit used is shown in detail. The scale of the instrument is linear and full scale deflection corresponds to 120 ug/m^3. A complete analysis of mercury vapour concentration in a given room can be carried out in 30-40 sec.

Veidenbakh, V. A. and Levina, P. I.
EFFECT OF THE DEVELOPER CONCENTRATION ON THE RAPID DEVELOPMENT PROCESS. II. INVESTIGATION OF THE HYDROQUINONE DEVELOPER. [1961] 9p. 3 refs.
Order from OTS or SLA $1.10 62-10984

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 4, p. 241-246.

DESCRIPTORS: *Motion picture film, Processing, *Photographic chemicals, Quinones, Hydroxides, Effectiveness, Motion pictures, Preparation.

An investigation of the process of rapid development of a fine-grain, positive, motion-picture film with hydroquinone, containing two active negatively charged groups in the para-position, showed that the nature of the action of hydroquinone is different from that of metol. This difference is shown in the form of curves of dependence of the photographic image density upon the logarithm of the developer concentration and, by the fact that, when hydroquinone is used, potassium bromide appreciably affects the photographic development process. At low hydroquinone concentrations, an increase in the potassium bromide concentration causes not only a decrease in the photographic image density, but also an increase in the induction period of development. The mechanisms of fog formation are the same during rapid development with hydroquinone and metol; in both cases potassium bromide decreases the fog density. The process of rapid development of a positive, fine-grain motion-picture film with hydroquinone is governed by the electrochemical theory of development within a fairly wide range of concentrations, beginning from 0.025-0.1 M of hydroquinone, depending upon the agitation of the developer and the length of development time. Deviations from the electrochemical theory of development are observed only at low hydroquinone concentrations. (Author)
(See also 60-18865)

Plastics

Corso, C.
THERMAL DEHYDROHALOGENATION OF POLYVINYL CHLORIDE. [1962] 3p.
Order from ATS $3.75 ATS-45P59I

Trans. of [Ia] Chim[ica] e [l']Ind[ustria] (Italy) 1961, v. 43, no. 1, p. 8-9.

DESCRIPTORS: *Vinyl chlorides, Polymers, *Dehydrogenation, *Halogenation, Chemical reactions, Chlorides.

Dubois, P.
THE SLOW CORROSION OF PLASTICS. Rept. presented to the Anticorrosion Conference, Paris, 14-17 Nov 60. [1962] 32p. 12 refs.
Order from SLA $3.60 62-14434

Trans. of Corrosion et Anticorrosion (France) 1961, v. 9, no. 5, p. 145-159.

DESCRIPTORS: *Plastics, *Corrosion, Corrosion inhibition, Metals, Surfaces, Corrosive liquids.

The corrosion of plastic objects or by-products is examined under the influence of internal factors (composition, structure, bonds, internal tensions, macrostructure) and external factors (photochemical, thermal, chemical or mechanical stresses) and means making it possible to gage the behavior of plastics (accelerated tests) and data furnished by studies and tests in this connection are reviewed. (Author)

Fischer, H.
POLYTETRAFLUOROETHYLENE. Pt. 5 of Fluorochemistry. [1962] 17p.
Order from ATS $23.40 ATS-78P60G

Trans. of Plaste u[nd] Kautschuk (Germany) 1961, v. 8, no. 6, p. 304-310.

DESCRIPTORS: *Fluorides, *Ethylenes, *Polymers, *Plastics, Resins.

Oberst, Hermann, Bohn, Lothar, and Linhardt, Friedrich.
VIBRATION-DAMPING PLASTICS IN NOISE CONTROL. Paper presented at the German Plastics Convention (no. 9) Berlin, 12-14 Apr 61. [1962] 41p. 40 refs.
Order from SLA $4.60 62-14441

Trans. of Kunststoffe (West Germany) 1961, v. 51 [no. 9] p. 495-502.

DESCRIPTORS: *Noise, Control, *Reduction, *Plastics, Vibration, Damping, Metals, Sheets, Coatings.

A number of examples serve to illustrate the present state of the art. (Author)

Pavlovich, P. I.
VINYL CHLORIDE RESINS. I. DEVELOPMENT OF RESIN MANUFACTURE FROM POLYVINYL CHLORIDE. [1962] 4p. 15 refs.
Order from OTS or SLA $1.10 62-14067

Trans. of Promyshlennost' Organicheskoi Khimii (USSR) 1940, v. 7 [no. 12] p. 662-663.

DESCRIPTORS: *Vinyl chlorides, *Plastics, Polymers, Production, *Resins, *Chlorides.

Uskov, I. A., Tarasenko, Yu. G., and Kusnitsyna, T. A.
FILLED POLYMERS. IV. COMPOUNDING OF DISSOLVED POLY(METHYL METHACRYLATE) WITH FILLERS. [1962] 4p.
Order from ATS $6.25 ATS-94P59R

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 1, p. 37-40.
An abstract trans. is available from OTS or SLA $1.10 as 61-19866, AID-61-44, AD-255 786, 10 Apr 61, 2p.

DESCRIPTORS: *Plastics, *Resins, Polymers, *Acrylic resins, Methyl radicals, Bentonite, Montmorillonite, Clays, Additives, Mechanical properties, Hardness, Viscosity, Decomposition, Calcite, Reinforcing materials, Heat, Physical properties.

THE NEWLY-DEVELOPED ESCHER-WYSS NEUTRAL-SULPHITE METHOD. [1962] 4p.
Order from SLA $1.10 62-16084

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Wood pulp, Processing, Lignin, Cellulose, *Sulfites, Bleaching, Sulfate pulp.

Dolgachev, N. I.
AUTOMATING THE MANUFACTURE OF INSULATING FIBERBOARD. 7 Feb 62, 7p. 1 ref. JPRS: 12372.
Order from OTS $0.50 62-11163

Trans. of Bumazhnaya Promyshlennost' (USSR) 1960 [v. 35] no. 4, p. 22-24.

DESCRIPTORS: *Fiberboard, *Insulating materials, Production, Machines, Automation, *Wood pulp machines.

Hochauz, E.
CARBON BLACK FILLED PAPERS. Paper read at the Scientific Conference of the Chamber of Engineering, Trade Association for Timber, Paper, Polygraphy (no. 17) Leipzig, 20-22 Apr 61. Dec 61, 7p. 6 refs.
Order from SLA $1.10 62-14491

Trans. of Zellstoff u[nd] Papier (Germany) 1961, v. 10, no. 9, p. 344-348.

DESCRIPTORS: *Paper, *Carbon black, Additives, Plastics, Production.

The possibilities are considered of utilising carbon black in the paper-making industry.

Holte, T[orgrim] and Gregersen, A[lv].
METHOD FOR GRAVIMETRIC DETERMINATION OF THE FLUFFING OF BOXBOARD. Oct 61, 6p. (10 figs. omitted).
Order from SLA $1.10 61-20513

Trans. of das Papier (West Germany) 1960, v. 14, no. 10a, p. 575-580.

DESCRIPTORS: *Containers, *Wood pulp, Surfaces, Processing, *Paper industry, Gravimetric analysis, Particles, Films, Adhesion.

Höpner, Theodor.
DETERMINATION OF CHLORATE-CHLORINE IN WASTE LIQUORS. [1961] 17p. 7 refs.
Order from SLA $1.60 62-10999

Trans. of das Papier (West Germany) 1950 [v. 4] no. 12, p. 249-[254].

DESCRIPTORS: *Black liquor, *Chlorates, *Chlorine, Determination, Impurities, Chemical impurities, Reagents, Oxidation, Permanganates.

Kratzl, K.
WOOD CHEMISTRY IN JAPAN. 30 Mar 62 [14]p.
Order from SLA $1.60 62-14828

Trans. of Holzforschung und Holzverwert[ung] (Austria) 1961, v. 13, no. 1, p. 11-17.

DESCRIPTORS: *Wood, *Chemistry, Hydrolysis, Wood pulp, Paper industry, Production, Economics, *Carbohydrates, Furfurals, Industrial research.

The Japanese tend to utilize all resources, and their waste utilization is superior to any other country. The chemical utilization of the wood causes a waste up to 50%. In the utilization of this waste, the Japanese are at least two years ahead of the rest of the world. (Extracted)

Perepelkin, K. V.
RAPID METHOD FOR CONTROL OF THE DEGREE OF DEAERATION OF VISCOSE AND OTHER SPINNING SOLUTIONS WITH LOW VAPOR PRESSURE. May 62, 3000 words.
Order from LSA $30.00

Trans. of Khimi[cheskie] Volok[na] (USSR) 1960, no. 2, p. 53-56.

DESCRIPTORS: *Cellulose, Solutions, Air, Separation, Control, Vapor pressure.

Werr, Friedrich.
THE DETERMINATION OF THE GREASE [RESISTANCE] OF PAPER. I. DESCRIPTION AND CRITICISM OF THE VARIOUS TEST METHODS. [1962] 20p. (1 fig. omitted) 36 refs.
Order from SLA $1.60 62-16069

Trans. of das Papier (West Germany) 1961, v. 15, no. 6, p. 222-229.
Another trans. is available from SLA $1.60 as 62-10349 [1961] 12p.

DESCRIPTORS: *Paper, Greases, Resistance, Determination.

For abstract see Technical Translations 7: 672, 1962.

Werr, Friedrich.
THE DETERMINATION OF THE GREASE RESISTANCE OF PAPER, III. [1962] 17p. (6 figs. 12 tables omitted) 2 refs.
Order from SLA $1.60 62-16200

Trans. of das Papier (West Germany) 1961, v. 15, no. 9, p. 415-427.
Another trans. is available from SLA $2.60 as 62-10309, Oct 61, 21p.

DESCRIPTORS: *Paper, Greases, Resistance, Determination.

Wultsch, F[erdinand] and Schubert, K[arl].
IMPROVING THE PRINTABILITY OF PAPERS BY THE ADDITION OF STRAW PULP. Sep 61, (5 figs. omitted) 6 refs.
Order from SLA $1.10 61-20666

Trans. of das Papier (West Germany) 1960, v. 14, no. 10, p. 458-461.

DESCRIPTORS: *Paper, Printing, Straw, Cellulose, Additives, Manufacturing methods.

MATHEMATICS

Barbalat, I.
NEAR-PERIODIC SOLUTIONS OF NONLINEAR DIFFERENTIAL AND RICCATI EQUATIONS. (Solutii Aproape-Periodice ale Ecuatiilor Diferentiale Neliniare [and] Solutii Aproape-Periodice ale Ecuatiei lui Riccati). 12 June 61 [14]p. 10 refs. JPRS: 9461.
Order from OTS or SLA $1.60 62-19452

Trans. of Academia Republicii Populare Romine. Comunicarile, 1961, v. 11, no. 2, p. 155-159 and 161-165.

DESCRIPTORS: *Non-linear differential equations, *Differential equations, Solutions, Inequalities, Integration.

Bialas, Aleksander.
DIVISIBILITY OF NUMBERS, tr. by I. Bellert. 1962 [47]p. PL-480 Comm.
Order from OTS $0.50 61-11301

Trans. of mono. O Podzielnosci Liczb [Warsaw] 1960, 71p.

DESCRIPTORS: *Numbers, *Number theory, *Arithmetic operations, Training.

Contents:
Divisibility of integers
Properties of divisibility of natural numbers
Comments on teaching elementary knowledge of the divisibility of numbers.

Charin, V. S.
A NOTE ON THE MINIMAL CONDITION FOR SUBGROUPS (Zamechie ob Uslovii Minimal'nosti dlya Podgrupp). Mar 62 [5]p. 2 refs. RTS 2073.
Order from OTS or SLA $1.10 62-24309

Trans. of Akademiya Nauk SSSR. Doklady, 1949, v. 66, no. 4, p. 575-576.

DESCRIPTORS: *Groups (Mathematics), Algebra, Number theory.

In the case of arbitrary locally finite p-groups the minimal condition for normal divisors is equivalent to the minimal condition for subgroups. In the case of locally soluble groups possessing a derived series of finite lengths terminating in the unit subgroup (i. e., in the case of soluble groups) these conditions are not equivalent. The existence is proved of soluble periodic groups which possess the minimal condition for normal divisors but do not satisfy the minimal condition for subgroups. An example of such a group is constructed.

Gradshtein, I. S.
DIRECT AND CONVERSE THEOREMS: THE ELEMENTS OF SYMBOLIC LOGIC. International Series of Monographs on Pure and Applied Mathematics, v. 27. May 62, approx. 160p.
Order from PP $3.50

Trans. of mono. [Pryamaya i Obratnaya Teoremy; Elementy Algebry Logiki, 3d ed, Moscow, 1959, 127p.].

DESCRIPTORS: Mathematics, *Mathematical logic, Algebra, Theory.

Pinsker, I. Sh.
REPRESENTATION OF FUNCTIONS OF MANY VARIABLES BY USING ADDERS, MULTIPLIERS AND THE SIMPLEST FUNCTIONAL APPARATUS. [1958] 17p. 6 refs. MDF P-130.
Order from OTS or SLA $1.60 62-19875

Trans. of [Akademiya Nauk SSSR]. Inst[itut] Mashin[ovedeniya]. Trudy, 1955 [v. 15] no. 8, p. 35-51. Another trans. is available from OTS or SLA $2.60 as 61-16756 [1961] [22]p.

DESCRIPTORS: *Functions, Numerical analysis, Errors, Analog computers, Digital computers, Computers, Scheduling, Corrections, Tables.

For abstract see Technical Translations 7: 809, 1962.

Tikhonov, V. I.
DISTRIBUTION OF EXCURSIONS OF NORMAL FLUCTUATIONS OVER THE DURATION. [1961] 14p. 9 refs. MDF T 113.
Order from OTS or SLA $1.60 62-15904

Trans. of Radiotekh[nika] i Elekt[ronika] (USSR) 1956, v. 1, no. 1, p. 23-33.

DESCRIPTORS: *Statistical functions, *Probability, Statistical distributions, Transformations (Mathematics), Voltage, Electronics, *Correlation techniques.

An approximate expression is given for the probability density for the duration of excursions of normal fluctuations and for the intervals between the excursions. (Author) (See also 62-15921)

Computing Devices

Aczel, Istvan.
THE PRACTICAL APPLICATION OF ELECTRONIC COMPUTERS IN HUNGARY. 7 Feb 62, 32p. JPRS: 12376.
Order from OTS $1.00 62-11164

Trans. of Magyar Tudomany (Hungary) 1961, v. 6[68] no. 6, p. 341-352.

DESCRIPTORS: *Digital computers, Computers, *Hungary, Programming, Scheduling, Analog computers.

Efimov, I. A.
INVESTIGATION OF REMAGNETIZATION TIME OF FERROMAGNETIC FILM ELEMENTS. 17 Jan 62[25]p, 2 refs. JPRS: 11980.
Order from OTS or SLA $2.60 62-15446

Trans. of mono. (bulletin) Issledovaniya Vremi Peremagnichivaniya Ferromagnitnykh Plenochnykh Elementov, Moscow, 1961, 23p.

DESCRIPTORS: *Ferromagnetic materials, *Films, Physical properties, *Computers, Magnetism, Time, Memory devices.

An investigation was carried out of the remagnetization time of ferromagnetic film elements along the axis of easy magnetization with a simultaneous superimposition of a constant transverse field. The relation of time of remagnetization to the magnitude of the applied field for various values of the constant transverse field was determined experimentally for one of the samples used in the experiment. (Author)

Glushkov, V. M.
THEORY OF INSTRUCTION FOR ONE CLASS OF DISCRETE PERCEPTRONS. Foreign Developments in Machine Translation and Information Processing n no. 97. 11 May 62 [29]p. 6 refs. JPRS: 13725.
Order from OTS or SLA $2.60 62-24740

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1962, v. 2, no. 2, p. 317-335.

DESCRIPTORS: Data processing systems, Reading machines, Design, Instruction manuals, *Visual perception, Memory devices, *Teaching machines

A variation of the instruction theory for discrete perceptrons is proposed that may serve as a basis for solving all problems arising in practice, associated with a definition of the statistical rules of conduct of

discrete perceptrons belonging to a sufficiently broad class. A number of examples showing the application of the proposed theory are presented, which demonstrate how this theory can be used for solving concrete problems dealing with the behavior of perceptrons belonging to a more general class than the class of α -systems examined by Joseph.

Shikan, V.
MACHINES COMPUTE. 27 Apr 62 [18]p. JPRS: 13589.
Order from OTS or SLA $1.60 62-24398

Trans. of Nauka i Zhyttya (USSR) 1961 [v. 11] no. 9, p. 20-23.

DESCRIPTORS: *Cybernetics, *Computers, *Control systems, Analog computers, Machines, Industry.

MECHANICS

CONVENTIONAL DESIGNATIONS ON KINEMATIC DIAGRAMS. [1962] [7]p. (55 tables omitted). [DSIR] NLL M 3315.
Order from OTS or SLA $1.10 62-23901

Trans. of [Russian State] Standard GOST 3462-52 (replaces GOST 3462-46) gr. GOl, effective 4 Jan 53.

DESCRIPTORS: *Drafting, Mechanics, *Standards, Mechanical engineering.

Barenblatt, G. I.
ON SELF-SIMILAR SOLUTIONS OF THE CAUCHY PROBLEM FOR THE NONLINEAR PARABOLIC EQUATION OF THE NONSTEADY FILTRATION OF A GAS IN A POROUS MEDIUM. [1961] 6p. 6 refs. MDF B-132.
Order from OTS $0.50 62-11326

Trans. of Prikl[adnaya] Mate[matika i] Mekh[anika] (USSR) 1956, v. 20, no. 6, p. 761-763.

DESCRIPTORS: *Porous filters, *Gases, Separation, *Gas flow, *Partial differential equations, Solutions.

The self-similar solutions of the Cauchy problem are investigated for

$$\frac{\partial p}{\partial t} = a^2 \frac{1}{r} \frac{\partial}{\partial r} r \frac{\partial p^2}{\partial r},$$

where t is time, r is the distance from the flow axis of symmetry, and a is a constant which can be determined by the properties of the filtering gas and by the porous medium.

Bogolyubov, N[ikolay] N[Nikolaevich] and Mitropol'skii, Y[urii] A[leksievich].
ASYMPTOTIC METHODS IN THE THEORY OF NON-LINEAR OSCILLATIONS, 2D REV. ED. Vol. 10 of Russian Monographs and Texts on Advanced Mathematics and Physics. 1962, 547p.
Order from GB $25.00

Trans. of mono. [Asimptoticheskie Metody v Teorii Nelineinykh Kolebanii, 2d rev. ed. Moscow] n. d.

DESCRIPTORS: *Nonlinear systems, *Oscillation, Theory, Frequency, Series expansion, Differential equations, Numerical analysis.

Rozovskii, M. I.
SIMPLIFICATION OF THE NON-LINEAR INTEGRAL EQUATIONS FOR CREEP AND RELAXATION IN A COMPLEX STRESSED CONDITION (Ob Uproshchenii Nelineinykh Integral'nykh Uravnenii Polzuchesti i Relaksatsii pri Slozhnom Napryazhennom Sostoyanii). [1961] [4]p. (foreign text included) 2 refs. NEL Trans. no. 724; NLL M. 1831.
Order from OTS or SLA $1.10 61-13155

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1957, v. 27, no. 12 [p. 2791-2792].

DESCRIPTORS: Materials, Stresses, *Creep, *Relaxation time, *Elasticity, Mathematical analysis, *Integral equations, Solutions, Deformation.

Previously proposed equations (Zhur. Tekh. Fiz. 25: 2339-2354, 1955; available in translation from OTS or SLA as 61-19249) are simplified.

Totaro, Carmelo.
DIMENSIONAL CONSIDERATIONS ABOUT FUNDAMENTAL EQUATIONS OF THE RELATION OF MAGNETO-FLUID DYNAMICS. May 62, 1200 words.
Order from LSA $11.00

Trans. of Istituto Lombardo di Scienze [e Lettere]. Rendiconti (Italy) 1961, v. 95A, p. 83-91.

DESCRIPTORS: *Magnetohydrodynamics, *Fluid mechanics, Equations, Differential equations.

Aerodynamics and Pneumatics

Abramovich, G. N., Makarov, I. S., and Khudenko, B. G.
TURBULENT WAKE BEHIND A BLUNT BODY IN A BOUNDED STREAM. 13 Mar 62 [18]p. 5 refs.
FTD-TT-62-21; SC-995.
Order from OTS or SLA $1.60 62-24271

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1961, no. 1, p. 61-73.

DESCRIPTORS: *Blunt bodies, Gas flow, Boundary layer, Turbulence, Wake, Aerodynamics.

Results are given of experimental investigations of the structure of the turbulent wake behind blunt bodies of different shape in closed plane-parallel flow with a cross section blockage of up to 14%, that is under conditions approximating the flow of a stream past flame stabilizers in combustion chambers. (Author)

Bauer, F. and Marek, J., eds.
ISENTROPIC GAS-FLOW. May 62, 643p.
Order from PLP $32.50

Trans. of unidentified Czechoslovakian mono., pub. by the Czechoslovakian Academy of Sciences, 1961.

DESCRIPTORS: Tables, *Gas flow, Subsonic flow, Supersonic flow, Adiabatic gas flow, Temperature, Pressure, Density, Velocity, Specific heat, Gases.

Kosterin, S. I., Koshmarov, Yu. A., and Osipov, Yu. V.
EFFECT OF DIVERGENCE ANGLE ON LOCATION OF THE SHOCK WAVE IN A SUPERSONIC NOZZLE FOR UNCALCULATED CONDITIONS IN THE PRESENCE OF HEAT TRANSFER (Vliyanie Ugla Rastovora na Polozhenie Skachka Uplotenii v Sverkhzvokovom Sople na Neraschetnykh Rezhimakh pri Nalichii Teploobmena) tr. by M. E. 12 Feb 62, 8p. (5figs. omitted) 6 refs. I 0026.
Order from OTS $0.50 62-11676

Trans. of Inzhernero-Fizicheskii Zhurnal (USSR) 1961 [v. 4] no. 4, p. 3-9.

DESCRIPTORS: *Supersonic nozzles, Nozzles, *Shock waves, Statics, Pressure distribution *Heat transfer.

Results are presented of experimental investigations into the operation of a flat supersonic nozzle with a V-shaped portion, for uncalculated conditions and in the presence of heat transfer within a wide range of divergence angles (from 10° to 50°. Empirical formulae are proposed for nozzle calculations. With an increase in the divergence angle of the nozzle, the value of the relationship between the cross-sectional area of the nozzle, where the shock wave meets the wall, and the throat sectional area decreases. No heat transfer effect is discovered. The relationship between stagnation pressure and external pressure, and the divergence angle of the supersonic part of the nozzle, exert a basic effect on the position of the shock wave. The results are generalized for the case of axiallysymmetric conical (tapered) nozzles. Various practical recommendations for carrying out engineering computations are given.

Hydrodynamics, Hydraulics, and Hydrostatics

Abasov, M. T., Alekperov, S. I. and others.
FLOW OF FLUID UNDER ELASTIC DRIVE. [1962] 6p.
Order from ATS $8.20 ATS-45N58R

Trans. of Izvest[iya] Vysshikh Uchebnykh Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 8, p. 45-50.

DESCRIPTORS: *Fluid flow, *Elasticity.

Bergeron, Louis.
WATER HAMMER IN HYDRAULICS AND WAVE SURGES IN ELECTRICITY, tr. by S. Logan Kerr and others. Apr 61, 1v.
Order from The American Society of Mechanical Engineers, 345 E. 47th St., New York,17, N. Y. $15.00 (ASME members, $12.00)

Trans. of unidentified French mono., n.p., n.d.

DESCRIPTORS: *Hydraulics, Hydraulic research, Water, *Hammers, Pressure, *Hydraulic conduits, Mechanics, *Electricity, Propagation.

Contents:
A graphical method for the calculation of variations in the hydraulic condition in pressure conduits
Applications
Utilization of the graphical methods in other branches of mechanics
Appendix.

Charnyi, I. A.
HYDRAULIC IMPACT OF VISCOUS FLUID ON PIPE LINES. [1961] 1p.
Order from OTS or SLA $1.10 62-10892

Abstract trans. of Moskovskii Neftyanyi Institut. Trudy (USSR) 1940, v. 2, p. 197-198.

DESCRIPTORS: *Pipes, Fluid flow, *Hydraulics.

Kazakevich, F. P.
THE EFFECT OF SURFACE ROUGHNESS ON THE AERODYNAMIC RESISTANCE OF NESTS OF TUBES SUBJECTED TO A TRANSVERSE FLOW OF GAS. [1962] [6]p. 7 refs. C. E. Trans. 2169; NLL M.4811.
Order from OTS or SLA $1.10 62-24863

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 1, p. 56-58.
Another trans. is available from OTS or SLA $1.10 as 62-15174, FTD-TT-61-87, 15 Nov 61 [10]p.

DESCRIPTORS: *Gas flow, *Pipes, Surfaces, Milling machines, Turbulence, Boundary layer, *Hydrodynamics.

For abstract see Technical Translations 7: 1044, 1962.

METALLURGY

BUTT WELDING. May 62.
Order from BISI £ 2 10s BISI-2765

Trans. of Draht (West Germany) 1962, v. 13 [no. 1] p. 13-15.

DESCRIPTORS: *Welding, *Welded joints, Metal plates.

Baimakov, Yu. V. and Batashev, K. P.
PROGRESS IN THE FIELD OF ELECTROLYTIC POLISHING. [1962] 13p.
Order from ATS $17.75 ATS-27P61R

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1958, v. 3, no. 4, p. 464-470.

DESCRIPTORS: *Electrolytic polishing, Surfaces, Metals.

Bakhtinov, B. P. and Shternov, M. M.
METHODS FOR THE FURTHER DEVELOPMENT OF BLOOMING, SLABBING AND SECTION MILLS. Jan 58 [17]p. 2 refs. BISI Trans. no. 750; NLL M. 4167.
Order from OTS or SLA $1.60 62-13199

Trans. from mono. [Problemy Metallurgii] (Problems of Metallurgy) ed. by A. M. Samarin, 1953 [484p.].

DESCRIPTORS: *Rolling mills, Automation, Machines, Industrial production, *Metals, Processing.

Baranovskii, P. G. and Pinus, Ya. S.
AUTOMATION OF OPEN HEARTH FURNACES BY ELECTRONIC APPARATUS. Apr 58 [6]p. BISI Trans. no. 927; NLL M. 4098.
Order from OTS or SLA $1.10 62-13209

Trans. of #Metallurg (USSR) 1958 [v. 3] no. 2, p. 15-17.
Another trans. is available from CB.

DESCRIPTORS: *Open hearth furnaces, *Automation, *Electronic equipment.

At the end of 1956, in one of the open hearth furnaces burning a mixture of coke oven and blast furnace gas, a system of the Kuznetsk Metallurgical Combine linked program control of the heating process was installed, by using electronic flow control units without a pulley mechanism for dynamical compensation. The system connects as yet only the control units of the gas supply, air and the reversing of valves according to certain parameters which maintain the temperature in the working space of the furnace and in the regenerators. The heat regulating system consists of three electronic flow control units controlled by the overall regulating device (which selects the heat input): the programming apparatus governed by the pre-set task for each control unit; the three differential gauges DM-218 and the electrical actuators of the throttle control mechanisms for gases IM-2/120, for air IMT-25/120 and for the control of the time interval between the reversing of the valves. With the new system the operator has only to set the maximum value of the heat load necessary for the given period, the remaining operations for determining the required flow of gases entering the mixture, of air for combustion and also the time interval between the reversing of the valve system, are done automatically.

Borodenchik, N. K. [Dikalov, A. I.] and others.
A THREE-BELL CHARGING MECHANISM. Feb 62.
Order from MT £4 15s MT Trans-183

Trans. of #Metallurg (USSR) 1961, v. 6, no. 2, p. 7-11.

DESCRIPTORS: *Blast furnaces, Industrial equipment.

Borodin, V. P., Darmanyan, P. E. and others.
FOUR-PHASE SCHEME OF INTEGRATED AUTOMATIC CONTROL OF FUEL-OIL HEATING OF OPEN HEARTH FURNACES. Sep. 58 [14]p. BISI Trans. no. 1044; NLL M. 4077.
Order from OTS or SLA $1.60 62-24092

Trans. of Stal' (USSR) 1958 [v. 18] no. 2, p. 114-120.

DESCRIPTORS: *Open hearth furnaces, Heating, Fuel oils, Control, Automatic, Steel industry.

Phase 1 consists of an appreciable part of the time needed for charging and 2/3 of that for melting; it is started by a time relay switch operated by a photo-relay at the moment of tapping. Phase 2 consists of the remainder of the time needed for melting; it is started by a time switch operating when the excess temperature in the roof over the pre-set temperature becomes steady. Phase 3 consists of the finishing period; it is started by a time switch operating at the moment of drawing off the slag. Phase 4 consists of the servicing time and the beginning of charging of the following heat; it is begun by a photo-relay operating at the moment of tapping. The integrated four-phase scheme of automatic control of fuel-oil furnaces is flexible in handling, convenient in production and makes it possible (according to preliminary data) to maintain the pre-set parameters in the furnace. During the experimental heats the scheme worked satisfactorily and this made it possible to adjust it in accordance with the progress of heat.

Brenner, P.
PROPERTIES AND APPLICATION OF A HEAT TREATABLE AND WELDABLE AlZnMg-ALLOY (KONSTRUKTAL 21/51). [1962] 13p. (8 figs. 13 refs. omitted).
Order from SLA $1.60 62-14833

Partial trans. of Aluminium (Germany) 1961, v. 37, no. 10, p. 633-644.

DESCRIPTORS: *Aluminum alloys, *Zinc alloys, *Magnesium alloys, Welding, Tensile properties, Elasticity, Heating, Corrosion-resistant alloys.

Bungardt, K., Müllders, O., and Lennartz, G.
THE EFFECT OF CHROMIUM, MOLYBDENUM, TUNGSTEN AND VANADIUM ON THE PROPERTIES OF 0.3% C STEELS. May 62.
Order from BISI £ 9 BISI-2677

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32, Dec, p. 823-841.

DESCRIPTORS: *Steel, Carbon alloys, Vanadium alloys, Tungsten alloys, Molybdenum alloys, Chromium alloys, Mechanical properties.

Cernoch, S., Repisky, I., and Spakovsky, E.
HEATING OF THE CHARGE IN A TWO-WAY FIRED SOAKING PIT. Feb 62.
Order from MT $28.50 MT Trans-200

Trans. of Hutnicke Listy (Czechoslovakia) 1961, v. 16, no. 5, p. 335-342.

DESCRIPTORS: *Metals, *Heating, *Temperature, Phase studies.

Chalus, F.
SEPARATION AND DETERMINATION OF THE SI-PHASE CONSTITUENTS IN SLAGS. May 62.
Order from MT $9.00 MT Trans-210

Trans. of Hutnicke Listy (Czechoslovakia) 1961, v. 16,

DESCRIPTORS: *Slags, Phase studies, Separation, Determination.

Chechuro, A. N., Kolesnik, I. L., and Yashin, Yu. F.
ELIMINATION OF FLUCTUATING COMBUSTION IN HOT BLAST STOVES. May 62.
Order from MT $6.50 MT Trans-231

Trans. of #Metallurg (USSR) 1961, v. 6, no. 9, p. 3-4.

DESCRIPTORS: *Blast furnaces, *Heaters, *Combustion.

Chernov, N. N.
ERRORS IN THE CONTROL OF THE GAS FLOW. Comments on the Paper by A. N. Chechuro and I. L. Kolesnik, MT Trans-144. May 62.
Order from MT $5.25 MT Trans-182

Trans. of #Metallurg (USSR) 1961, v. 6, no. 2, p. 4-6.

DESCRIPTORS: *Gas flow, Control, Errors, Materials Processing, *Metallurgy.

Chernov, N. N., Domnitskii, I. F., and Suchkov, I. A
THE RATIONAL LOCATION OF A BLAST FURNACE MIXING VALVE. Oct 57 [7]p. 3 refs. BISI Trans. no. 690; NLL M. 4124.
Order from OTS or SLA $1.10 62-24131

Trans. of Stal' (USSR) 1957 [v. 17] no. 5, p. 389-391.

DESCRIPTORS: *Blast furnances, *Valves, Design, Air blast, Mixtures, Heaters.

Siting of the mixing valve (or cold gate) between the blast-furnace and the first hot-blast stove makes it possible substantially to improve the conditions under which the hot-blast main lining works, while mixing of the hot and cold air remains satisfactory. (Author)

Dekhtyar, I. Ya., Litovehenko, S. G., and Fedchenko, R. G.
STUDY OF THE EFFECT OF PLASTIC DEFORMATION ON THE ELECTRICAL PROPERTIES OF ALLOYS OF THE Fe-Al SYSTEM. May 62.
Order from BISI £4 BISI-2832

Trans. of Akad[emiya] Nauk URSR [Kiev]. Instytut Metallofizyky. Sbornik Nauchnykh Rabot, 1960, v. 11, p. 121-128.

DESCRIPTORS: *Iron, *Iron alloys, *Aluminum alloys, Electrical properties, Plasticity, Deformation.

Fil', N. S. and Lemberikman, I. S.
CONVEYOR CHARGING OF BLAST FURNACE SKIPS. July 58 [7]p. BISI Trans. no. 689; NLL M. 4125.
Order from OTS or SLA $1.10 62-24132

Trans. of Stal' (USSR) 1957 [v. 17] no. 6, p. 493-495.

DESCRIPTORS: *Blast furnaces, *Conveyors, Construction, Automation.

The replacement of scale-car and later of skip charging by conveyor belt charging represents a progressive step. More rapid testing of this new system for charging the burden is especially necessary now, in view of the forthcoming construction of super blast furnaces. (Author)

Fischer, Wilhelm Anton.
CREEP RESISTING TITANIUM STEELS AND IRON TITANIUM ALLOYS. [1960] [2]p.
Order from SLA $1.10 60-16757

Trans. of unidentified German language mono. issued by Kaiser Wilhelm Inst. for Iron Research, Metallurgical Dept., n.d.
Another trans. is available from LC mi$0.50, ph$1.00 as PB-7044.

DESCRIPTORS: *Steel, *Iron alloys, *Titanium alloys, *Creep, Resistance, Carbides.

Gagen-Torn, K. V.
THE RATE CHARACTERISTICS OF PRESSES FOR NON-FERROUS METALS, tr. by J. H. Dixon. May 58 [9]p. 3 refs. BISI Trans. no. 962; NLL M. 4092.
Order from OTS or SLA $1.10 62-13201

Trans. of Tsvetnye Metally (USSR) 1957 [v. 30] no. 2, p. 61-67.

DESCRIPTORS: *Hydraulic presses, Metals, Extrusion, Machines.

An analysis shows that the rate characteristic of hydraulic press installations for extruding nonferrous metals, a rate representing the relationship between the pressures in the accumulator and the main cylinder of the press and the press rates, is given by

$$P_{acc} = P_{press} + \xi v^2_{press},$$

where P_{acc} is the head of high-pressure water in the

accumulator, and ξ is the adduced coefficient of resistance for the system according to Bakhmet'ev. Basic theses are advanced for establishing specific rate characteristics for industrial hydraulic press installations.

Galmiche, Ph. and Hivert, A.
METALLURGICAL APPLICATION OF POWDERS IN REDUCING HALOGEN ATMOSPHERE AT THE EQUILIBRIUM. V. OBTAINING PLASTIC CHROMIUM POWDER AND FRITTING CHROMIUM IN A HALOGEN ATMOSPHERE (Applications dans la Metallurgie des Poudres des Atmosphères Réductrices Halogenées a l'Equilibre. V. Obtention de Poudre de Chrome Plastique et Frittage de Chrome en Atmosphère Halogénée) tr. by June R. Hauger. [1960] [12]p. (8 figs. omitted).
Order from OTS or SLA $1.60 60-15286

Trans. of Revue de Métallurgie (France) 1958, v. 55, no. 10, p. 913-917.

DESCRIPTORS: *Powder metallurgy, *Halogens, Reduction, *Chromium, Plasticizers, Powder alloys, *Controlled atmosphere.

Ganich, A. A., Zarubin, V. F., and Yakovlev, V. G.
AUTOMATIC APPORTIONING AND WEIGHING OF BLAST-FURNACE BURDENS AND CONVEYOR BELT LOADING OF SKIPS. July 58 [9]p. 1 refs. BISI Trans. no. 735; NLL M. 4173.
Order from OTS or SLA $1.10 62-13195

Trans. of Stal' (USSR) 1957 [v. 17] no. 6, p. 496-500.

DESCRIPTORS: *Blast furnaces, Automation, Conveyors, Loading, Design, Electric motors, Control systems.

The replacement of scale-cars by stationary weighing hoppers and conveyor belt feeding of skips, raises the efficiency of burden charging and reduces the amount of metal needed for construction.

Gol'denberg, I. B.
STRAIGHTENING CHECKERS OF AIR REGENERATORS IN OPEN-HEARTH FURNACES. June 58 [8]p. 5 refs. BISI Trans. no. 844; NLL M. 4115.
Order from OTS or SLA $1.10 62-24122

Trans. of Stal' (USSR) 1957 [v. 17] no. 12, p. 1094-1096.

DESCRIPTORS: *Open hearth furnaces, Fuel consumption, Gas flow, Vortices, Design.

Investigations into the flow of combustion products in the slag pockets and in the spaces above the regenerator checkers revealed a non-uniformity of the distribution of flow through the cross section. An effective method of reducing this non-uniformity is by an addition in the passages to the regenerator checkers, which was tried out on the open hearth UZTM furnaces of the Lys'venkov Works, Magnitogorsk Combine and others. The straightening checkers made of dinas bricks have a service life of 50-60% of the duration of a campaign of the large open hearth furnaces with dinas roofs, (for a 600mm length of the straightening checkers). Upon the erection of straightening checkers, the specific consumption of conventional fuels drops on the average by 9%, and the temperature of the combustion products falls in consequence of an improvement in the functioning of the regenerators. The introduction of straightening checkers for improving the heat efficiency of the regenerators of the open hearth furnaces is recommended. (Author)

Gruzinov, V. K.
THE MOVEMENT OF THE CHARGE COLUMN IN A BLAST FURNACE. Sep 58 [9]p. 9 refs. BISI Trans. no. 864; NLL M. 4110.
Order from OTS or SLA $1.10 62-24117

Trans. of Stal' (USSR) 1956 [v. 16, no. 9]p. 771-773.

DESCRIPTORS: *Blast furnaces, Coke, Combination, Ores, Sinters, Melting.

The movement of charging materials in a blast furnace is produced not only by the burning of coke near the tuyeres but also by the melting and partial gasification of the materials before they reach the tuyere zone. The effect of the bosh as a restraining factor in the descent of the charge has been exaggerated. Its usual construction may be used to give rational dimensions to other elements of the furnace without the danger of substantially increasing the friction of the materials against the walls of the furnace. (Author)

Ivanov, M. K.
THE CONTROL OF GAS FLOW BY ALTERING THE LENGTHS AND CROSS-SECTIONS OF THE TUYERES. tr. by J. H. Dixon. June 58 [5]p. BISI Trans. no. 886; NLL M. 4104.
Order from OTS or SLA $1.10 62-24111

Trans. of Stal' (USSR) 1957 [v. 17] no. 12, p. 1071-1073.

DESCRIPTORS: *Gas flow, Control, *Blast furnaces, Coke, Consumption, Cast iron, Production.

Experience gained from the operation of furnaces Nos. 1 and 2 at the Kushvinsk works shows that there is a definite relationship between throat diameter and tuyere protrusion. The layout of the tuyere openings must be matched with that of the ore lens in the throat. In this case, the movement of the charge and the gas flow become steady, and the use of the thermal and chemical energies of the gases, the regularity of working, and all the technical and economic data for the working of the furnace improve. (Author)

Kochinev, E. V.
BLOWING IN OF BLAST FURNACES OF 1719 m^3 CAPACITY. Feb 62.
Order from MT $13.00 MT Trans-219

Trans. of #Metallurg (USSR) 1961, v. 6, no. 6, p. 3-7.

DESCRIPTORS: *Blast furnaces, Starting.

Kudelya, E. S.
THE SEPCTRAL ANALYSIS OF FUSED WELDING FLUXES, tr. by J. H. Dixon. July 58 [5]p. 3 refs. BISI Trans. no. 1033; NLL M. 4080.
Order from OTS or SLA $1.10 62-24095

Trans. of Avtomaticheskaya Svarka (USSR) 1957 [v. 10] no. 1, p. 73-76.

DESCRIPTORS: *Welding fluxes, Spectrographic analysis, Fused materials, Copper, Metal powders, Powder metallurgy.

A procedure is described for the quantitative determination of the SiO_2, MnO, CaO, CaF_2, Al_2O_3, MgO and FeO in types AN-348, AN-8, AN-20 and OSTs-45 fused welding fluxes. The basis of the method is the briquetting of the samples of the flux being analyzed with copper powder. (Author)

Lipovetskii, I. A., Nefedov, A. A. and others.
EXPERIENCES WITH MECHANIZED COOLERS IN SECTION ROLLING MILLS. Sep 58 [12]p. 2 refs. BISI Trans. no. 830; NLL M. 4118.
Order from OTS or SLA $1.60 62-24125

Trans. of Stal' (USSR) 1956 [v. 16] no. 9, p. 798-802.

DESCRIPTORS: *Rolling mills, *Heat exchangers, Cutting tools, Automation, Electrical equipment.

During the introduction of Giprostal-type mechanised coolers in section rolling mills, considerable changes were made in the construction of the cooler at the 280 mill, which made it possible to improve the working of a number of units (flying shears, feeding rollers, mechanised sorting tables etc.); instead of baskets behind the cold cutting press, sorting tables were put in. (Author)

Loginov, V. I.
MOVEMENT OF GASES AND MATERIALS IN THE BLAST FURNACE. Comments on the Paper by A. N. Chechuro and I. L. Kolesnik, MT Trans-144. May 62.
Order from MT $9.00 MT Trans-193

Trans. of #Metallurg (USSR) 1961, v. 6, no. 3, p. 6-9.

DESCRIPTORS: *Gas flow, Control, Errors, Materials, Processing, *Metallurgy.

Moiseevich, S. I.
THE EVAPORATION COOLING OF OPEN-HEARTH FURNACES [Isparitel'noe Okhlazhdenie Martenovskikh Pechei]. Oct 57 [10]p. BISI Trans. no. 691; NLL M. 4123.
Order from OTS or SLA $1.10 62-24130

Trans. of Stal' (USSR) 1957 [v. 17, no. 7] p. 658-662.

DESCRIPTORS: *Open hearth furnaces, Cooling, Evaporation, Steam, Electric power production

A description of the installation of evaporation cooling of open hearth furnaces on the Makeyevskiy Works and some remarks on the efficiency of its operation are given. It is pointed out that in the cooling systems of all furnaces, considerable pulsation and hydraulic knocks are observed. No definite relationship between changes in the intensity of pulsation and changes in the thermal load were found. Despite this deficiency, the evaporation cooling increases the durability of cooled parts and does not limit further increase in the duration of furnace campaigns. On the basis of experience gained, the following recommendations are made: (1) de-aeration of water; (2) external supply of water by two mains with a reserve capacity of softened water for at least 10 - 12 hrs (of total melting shop requirements); (3) thermal insulation of outlet ascending pipes; (4) installation of separate steam separators (if steam from other sources makes feeding water out of range required); and (5) the use of individual outlets from each cooled part, as hydro-dynamics of a comples system obtained by combining outlets from a number of cooled parts are not sufficiently known and an empirical choice of conditions for stable circulation is difficult. The utilisation of heat from the evaporation cooling on the works is outlined; it is pointed out that the heat recovered is as yet not completely utilised and possibilities of its utilisation are discussed.

Nagovitsyn, D. F.
RAPID BURNING IN OF AN OH FURNACE HEARTH. Nov 61.
Order from MT $6.00 MT Trans-145

Trans. of #Metallurg (USSR) 1960, v. 5, no. 8, p. 18-19.

DESCRIPTORS: *Open hearth furnaces, Combustion.

Nikitskaya, V. A. and Karpunin, A. M.
LONGITUDINAL CRACKS ON THE FLANGES OF RAILWAY RAILS, tr. by J. Murray. 26 June 58 [9]p. 2 refs. BISI Trans. no. 813; NLL M. 4120.
Order from OTS or SLA $1.10 62-24127

Trans. of Stal' (USSR) 1957 [v. 17] no. 4, p. 347-351.

DESCRIPTORS: *Railroad tracks, *Flanges, Fracture (Mechanics), Metallurgical analysis, Iron industry, Steel industry.

Defects observed on the flanges of rails, outwardly resembling laps, are rolled out longitudinal corner cracks cracks affecting the bottom part of rail ingots. Factors which increase the fluidity and teeming rate of the steel promote longitudinal corner cracking on rail ingots. To combat longitudinal cracking when bottom pouring is employed it is expedient to reduce the silicon content of the iron, to increase somewhat the aluminum addition in the mould, lower the teeming temperature to 1460-1470°C, to reduce the diameter of the nozzle in the teeming ladle to 45 mm. and the syphon tube to 40 mm., adopt a cylindrical nozzle in the bottom of moulds, reduce the taper in the mould walls. The greatest effect is obtained by lowering the temperature and rate of teeming of the metal. With bottom pouring, however, the sharp deterioration thereby caused in the macro-structure of the bottom of

the ingot restricts in practice the possibility of a change in the pouring temperature to the narrow margin of 1470-1475°C. Consequently, the only way of eliminating rejections of rails owing to longitudinal corner cracks on ingots is by changing over to top pouring of rail steel, which satisfactorily solves the problem of improved macro-structure of the bottom of the ingot with a general rise in the yield of first-quality rails to 90-92%. (Author)

Onoprienko, V. P. and Starshinov, B. N.
OPERATION OF A BLAST FURNACE WITH A TOP GAS PRESSURE OF UP TO 1.1 ATMOSPHERES. Nov 57 [24]p. BISI Trans. no. 718; NLL M. 4179.
Order from OTS or SLA $2.60 62-13187

Trans. of Stal' (USSR) 1957 [v. 17, no. 9] p. 772-778.

DESCRIPTORS: *Blast furnaces, Operation, Gas flow, Coke, Reduction, Ores, Pressure, Production.

By increasing the top gas pressure from 0.6 to 1.1 atmospheres it was possible to develop a peripheral gas flow. In this case reducing the coke round or increasing the 'trough' of direct charges (with simultaneous dumping of all charges into the furnace) leads to a growth in the charging of raw ores to the periphery and to a weakening in the peripheral gas flow. The static gas pressure varied linearly in relation to height in the furnace. With the top pressure raised from 0.11 to 0.46 atmospheres and the blast volume increased from 1400 to 3400 cu m/min the pressure of the blast rose to a greater extent than the gas pressure. The changes of pressure relative to the height in the furnace were preserved. With the quantity of blast unaltered the pressure of the gas in the stack grew to a lesser degree than at the top of the furnace. With the top gas pressure increased it was only possible to increase the rate of driving of the furnace concomitant with continued even working of the furnace. On the changeover to high top pressure (1.1 atmospheres) it was possible to increase the blast temperature by 20° to 25° and to increase the rate of driving of the furnace by 2 to 6%. The working of the furnace became more even. When working on raw ores the blast consumption increased by 6.2%, the rate of driving was raised by 5.5% and the ore to coke ratio by 1.7%; the flue dust make fell by 28.9%. The production rate of the furnace increased by 8.3%. The coke rate fell by 2.9%.

Orlov, Yu. A.
ERRORS IN THE CONTROL OF THE GAS FLOW AND THE DISTRIBUTION OF MATERIALS IN THE THROAT. Comments on the Paper by A. N. Chechuro and I. L. Kolesnik, MT Trans-144. May 62.
Order from MT $5.40 MT Trans-220

Trans. of #Metallurg (USSR) 1961, v. 6, no. 6, p. 7-9.

DESCRIPTORS: *Gas flow, Control, Errors, Materials, Processing, *Metallurgy.

Ostroukhov, M. Ya.
DISTURBANCES IN THE WORKING OF HEARTHS OF LARGE BLAST FURNACES. Nov 61.
Order from MT $7.20 MT Trans-146

Trans. of #Metallurg (USSR) 1960, v. 5, no. 9, p. 7-8.

DESCRIPTORS: *Blast furnaces, Steel, Processing.

Ostroukhov, M. Ya.
THE INFLUENCE OF THE KINETICS OF THE COKE COMBUSTION PROCESS ON THE DIMENSIONS OF THE OXIDATION ZONE IN A BLAST FURNACE. [1962] [9]p. 11 refs. BISI Trans. 1526; NLL M. 4882.
Order from OTS or SLA $1.10 62-25329

Trans. of Akademiya Nauk SSSR. Otd[elenie] Tekh-[nicheskikh] Nauk. Izvestiya, 1958, no. 5, p. 3-6.

DESCRIPTORS: *Blast furnaces, Oxidation, Coke, Combustion, Reaction kinetics.

The oxidation zone in a blast furnace is divided into two quite distinct areas: the oxygen and the reduction areas. The oxygen area, and its dimensions, coincide with the coke circulation zone. The length of the oxygen area is determined with the aid of the kinetic energy of the blast, because the analysis of conditions during the process of the $O_2 + C = CO_2$ reaction shows that this reaction takes place in the area of diffusion. The dimensions of the reduction area (where the $C + CO_2 = 2\,CO$ reaction takes place in the coke layer) depend on the factors of chemical kinetics such as the speed of gas filtration, the temperature, and others. The reduction in width of the reduction zone with increasing length of the oxidation zone (which occurs when the volume of blast is increased) shows that the $C + CO_2 = 2\,CO$ reaction takes place in the transition area. The dimensions of the reduction area, being a small absolute value, vary slightly with the changes in factors of chemical kinetics, and thus the latter have practically no influence on the length of the oxidation zone as a whole. (Author)

Pashinskii, V. F.
ERRORS IN THE CONTROL OF THE GAS FLOW AND THE DISTRIBUTION OF MATERIALS IN THE THROAT. Comment on the Paper by A. N. Chechuro and I. L. Kolesnik, MT Trans-144. May 62.
Order from MT $5.75 MT Trans-234

Trans. of #Metallurg (USSR) 1961, v. 6, no. 10, p. 10-12.

DESCRIPTORS: *Gas flow, Control, Errors, Materials, Processing, *Metallurgy.

Pejcoch, Osvald and Kuznik, Jaroslav.
THE SURFACING OF PILGER ROLLS OF ROLLING MILLS. [1962] [25]p. 9 refs.
Order from SLA $2.60 62-14656

Trans. of Hutnicke Listy (Czechoslovakia) 1959, v. 14, no. 2, p. 173-184.

DESCRIPTORS: *Rolling mills, Surfaces, Friction, Life expectancy, Costs.

In order to increase the wear resistance of the Pilger rolls and their total operational life, the development of manual surfacing of the steel Pilger rolls on the small and large Mannesmann tube rolling mill trains at the Vitkovice Works was carried out. The development of surfacing was carried out on the low-alloy steel rolls which had previously been used and also on carbon steel rolls, whose wear resistance is provided by the wear resistance of the deposit. By this means, apart from the saving in alloying elements for the production of the Pilger rolls, it was possible to obtain at the same time an increase in their impact strength and a simplification and reduction in the cost of the actual surfacing, for on rolls of the carbon steel, CSN 12050, which was chosen on account of its better weldability, it is possible to carry out surfacing without preheating. As the surfacing metal, Cr-Ni austenitic deposits were used, since they make it possible to turn the surfaced rolls by normal machining methods, and to impart considerable additional hardness to the deposit by cold working. An economic analysis showed that, when the introduction of surfaced Pilger rolls in the tube rolling mills at the Vitkovice works is completed, the costs for the Pilger rolls will fall on average by 48%, and through the reduction in the number of roll changes required the out of a train will rise by 1.1%. (Author)

Piotrkovskii, G. G. and Ashikhmin, F. V.
AUTOMATIC REGULATION OF BLAST FURNACE WORKING, tr. by S. Klemantaski. May 57 [14]p. BISI Trans. no. 952; NLL M. 4094.
Order from OTS or SLA $1.60 62-13207

Trans. of Stal' (USSR) 1957 [v. 17] no. 1, p. 16-20.

DESCRIPTORS: *Blast furnaces, *Automation, *Control systems.

The successful introduction of automation for the production processes has considerably improved the working of blast furnaces at the Magnitogorsk Metallurgical Combine during the past five year plan. At the Magnitogorsk furnaces provision is made for the automatic regulation of : clean-gas pressure, stove and hot-blast temperatures, blast moisture, top gas pressure; the protection of the large bell operation when working at high top pressure has also been automated. The time has now come to consider going on to the complex automation of blast furnaces. The operation of all the regulators should be dealt with in a computing mechanism which would act on the charging and thermal conditions of the furnace.

Popilov, L. Ya.
ELECTRIC AND CHEMICO-MECHANICAL METHODS OF WORKING METALS. 18 Sep 61 [25]p. 7 refs. MCL-1246; AD-265 701.
Order from OTS or SLA $2.60 62-13178

Unedited rough draft trans. of mono. Elektricheskie i Khimiko-Mekhanicheskie Sposoby Obrabotki Metallov, n.p., 1958, chap. 7, p. 424-430.

DESCRIPTORS: *Metals, *Processing, Electroplating, Electrodeposition, Electrolytic polishing, Chemical milling, Electroexplosive machinery, Spark machinery, Pickling, Heating, Heat treatment, Brazing, Sintering, Soldering.

A description is given of various methods in which electrical energy may be used to dissolve, cut, grind, heat, shape or harden metals.

Rädeker, W., Peters, F. K., and Friehe, W.
THE EFFECT OF ALLOYING ADDITIONS ON THE PROPERTIES OF HOT-DIP ZINC COATINGS. Feb 62.
Order from BISI £ 5 5s BISI-2574

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 28 Sep, 1313-1321.

DESCRIPTORS: *Zinc coatings, Alloys, Additives, *Steel, *Sheets, Coatings.

Reerink, W. and Lemke, K.
RELATIONSHIPS BETWEEN PREPARATION COKE PLANT AND BLAST FURNACE. June 62.
Order from BISI £ 5 15s BISI-1593

Trans. of Glückauf (West Germany) 1958, v. 94, 21 June, p. 832-842.

DESCRIPTORS: *Blast furnaces, *Coal, *Coke, Preparation.

Remen, T. F., Kheifets, V. L., and Vaisburd, S. E.
THE ACTIVITY OF METALS IN THE BINARY SYSTEMS Fe-S, Co-S, AND Ni-S. [1962] 8p.
Order from ATS $13.85 ATS-31P60R

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Tsvetnaya Metallurgiya (USSR) 1961, v. 4, no. 6, p. 58-64.

DESCRIPTORS: *Iron alloys, *Cobalt alloys, *Nickel alloys, *Sulfur, Metals, Metallurgical analysis.

Rogoza, G. D.
PROBLEMS OF THE PRODUCTION OF SHEETS FOR DEEP DRAWING IN THE AUTOMOBILE INDUSTRY (AN ASSESSMENT). June 58 [7]p. 5 refs. BISI Trans no. 745; NLL M. 4168.
Order from OTS or SLA $1.10 62-13190

Trans. of Stal' (USSR) 1957 [v. 17] no. 10, p. 941-943.

DESCRIPTORS: Automotive industry, *Sheets, Production, *Steel, Drawing (Machine processing).

In connection with the expansion in the production of high-grade sheet for the automobile industry, and the necessity for an increase in the weight of ingots, which might, where rimming steel is used, bring about an increase in variations in metal structure and a reduction in its deep drawing properties, it would seem to be

appropriate to change over to the pouring of non-ageing killed steels, accompanied by the introduction of hardness control of the sheets. (Author)

Schepers, A. and Licht, F.-R.
MEASURING THE WEAR OF BLAST-FURNACE LININGS BY MEANS OF RADIOACTIVE ISOTOPES. [1962] [11]p. 3 refs.
Order from SLA $1.60 62-14400

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 10, p. 669-674.
Another trans is available from BISI £4 5s as BISI-1386 [1959].

DESCRIPTORS: *Blast furnaces, Coatings, *Combustion chamber liners, Life expectancy, *Radioactive isotopes.

Wear measurements with Co 60 isotopes made on two blast furnaces either over two years or nine months showed that channel-like inroads form in the lining above the tuyeres caused by the wear-promoting effect of the blast; these inroads proceed so fast that the lining directly above the tuyeres, which is over 1,000mm thick, is in this instance worn away after three to four months to a thin layer less than 160 and 145mm thick. But even throughout the rest of the bosh, except for a few individual places, the lining has worn away to the same thickness after nine months or at the latest after a year, thus leaving in this part of the furnace a thin fire-brick layer about 100mm thick. The wear-promoting effect of the bosh tuyere blast can be seen in the lower part of the shaft as well, by the formation of channel-like in-roads. Average wear in this part of the furnace is certainly less than in the bosh, but after two years the brickwork here has worn away to leave a layer which is very thin in parts. Accelerated wear above the tuyeres is slowed down or stopped by cutting off the blast. (Author)

Shapovalov, M. A.
OXYGEN IN BLAST FURNACE SMELTING. [1959] [18]p. 15 refs. BISI Trans. 1424; NLL M.4872.
Order from OTS or SLA $1.60 62-25333

Trans. of Kislorod (USSR) 1958, v. 11, no. 4, p. 1-11.
Another trans. is available from BISI £6 5s as BISI-1424 [1959].

DESCRIPTORS: *Blast furnaces, Operation, Smelting, Oxygen, Iron, Steel, Production, Coke, Consumption.

Smelting with the blast enriched to 25% oxygen in the case of iron for steel manufacture, and to 2% oxygen in the case of foundry iron has been mastered. The productivity of the furnace rises by 3.5 to 4% for each additional 1%, above 21%, of oxygen in the blast. The coke consumption remains unchanged. Smelting of ferroalloys has been mastered with blast enriched to 31% oxygen, and the output increased considerably; by 80 to 90% in the smelting of ferromanganese, and by 53% in the smelting of ferrosilicon (according to the quantity of silicon reduced). The consumption of coke decreases by 15%. (Author)

Shchigolev, P. V. and Tomashov, N. D.
INVESTIGATION OF THE PROCESS OF ELECTROPOLISHING OF METALS [Issledovanie Protsessa Elektropolirovki Metallov]. [1962] 5p.
Order from ATS $8.00 ATS-96P60R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1955, v. 100, no. 2, p. 327-330.

DESCRIPTORS: *Metals, *Electropolishing.

Shvidkovskii, E. G.
CERTAIN PROBLEMS RELATED TO THE VISCOSITY OF FUSED METALS. Mar 62, 201p 73 refs.
NASA Technical trans. F-88, AD-273 563.
Order from OTS $3.50 62-11645

Trans. of mono. Nekotorye Voprosy Vyazkosti Rasplavlennykh Metallov, Moscow, 1955, 206p.

DESCRIPTORS: *Alloys, *Metals, Phase studies, Liquids, *Viscosity, Measurement, Theory, Crystallization, Impurities, Data, Steel, Cast iron, Iron alloys, Chromium alloys, Carbon alloys, Lead, Tin, Bismuth, Aluminum, Tin alloys, Lead alloys, Bismuth alloys, Zinc, Cadmium.

This monograph examines the theory of the torsional oscillation method for measuring the viscosity of liquids, and experimental technical problems associated with the use of this method, presents the results obtained during the measurement of the viscosity of fused metals and alloys, and gives a theoretical interpretation of certain problems concerned with the nature of the liquid state (structure of the liquid, mechanism of the viscous flow, kinetics of crystallization, the effect of insoluble impurities on the viscosity, etc.). The monograph includes original studies conducted by the author and his associates. This book is of interest to scientific workers, such as physicists and engineers, engaged in a study of the problem of the liquid state, and also to aspirants (post-graduate students) and senior students, specializing in the field of molecular physics and physics of metals. (Soviet Publisher's note)

Speith, K. G., Ende, H[ans] vom and others.
THE PHYSICO-CHEMICAL BASIS OF DESULPHURISATION IN THE BASIC OPEN-HEARTH FURNACE (WITH DISCUSSION). [1959] [19]p. 14 refs.
Order from SLA $1.60 62-14402

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 13, p. 926-933.
Another trans. is available from BISI £4 15s as BISI-1434 [1959].

DESCRIPTORS: *Open hearth furnaces, *Desulfurization, Slags, Iron compounds, Oxides.

Stupar', S. N.
SULPHUR EXCHANGE BETWEEN THE GASEOUS PHASE AND THE BASIC OPEN HEARTH FURNACE BATH. May 58 [19]p. 12 refs. BISI Trans. no. 705; NLL M. 4181.
Order from OTS or SLA $1.60 62-13181

Trans. of Stal' (USSR) 1957 [v. 17] no. 8, p. 707-713.

DESCRIPTORS: *Sulfur, Radioactive isotopes, Radioactivity, Gases, Metals, Desulfurization, Open hearth furnaces.

An investigation of the conditions of transfer of sulfur from the gaseous phase to the bath of the basic open hearth furnace, and vice-versa, made possible an exact definition of the nature of these processes and has revealed the possibility of improving the desulfurisation of the metal. The transfer of sulfur from the gas to the bath proceeds more intensively during the period on which the metallic part of the charge is added (the rate of absorption of sulfur at that stage amounts to 17 to 25% per hour of the sulfur content in the metal: during the period of heating, 8 to 11% per hour and during the finishing period 3 to 7.5% per hour). There exists a direct connection between the rate of absorption of sulfur from the gas phase during the finishing period and the rate of combustion of the carbon. The transfer of sulfur from the gas phase into the bath apparently proceeds mainly with the help of the metal droplets ejected through the slag into the gas phase during boiling. The transfer of sulfur into the gas phase increases greatly with increase in the content of ferric oxides in the slag and with a rise in the oxidation potential of the atmosphere. The transfer of sulfur from the liquid bath to the gas phase apparently proceeds by way of the oxidation of sulfur in the slag by oxygen of the gas phase. The iron oxides in the slag serve as a carrier link in the process of interaction of the oxygen of the gas phase with the sulfur of the slag.

Tselikov, A. I.
ACCURATE DETERMINATION OF THE MEAN RATE OF DEFORMATION DURING ROLLING. May 62.
Order from BISI £2 BISI-1939

Trans. of Stal' (USSR) 1954 [v. 14] no. 12, p. 1106-1107.

DESCRIPTORS: *Deformation, Mathematical analysis.

Tuluevskii, Yu. N. and Klimenko, V. M.
THE METHOD USED FOR THE AUTOMATIC CONTROL OF OPEN HEARTH FURNACE HEATING CONDITIONS AT THE ENAKIEVSKII WORKS. tr. by J. H. Dixon. June 58 [14]p. 5 refs. BISI Trans. no. 885; NLL M. 4105.
Order from OTS or SLA $1.60 62-24112

Trans. of Stal' (USSR) 1957 [v. 17] no. 12, p. 1086-1093.

DESCRIPTORS: *Open hearth furnaces, Heating, Control systems, Automatic, Fuel consumption, Reduction

The technological system for automatic regulation with fully automatic control adopted at the Enakiovskii works conforms to the basic principle of regulation of the thermal conditions according to the maximum thermal loading permissible for the combustion, heat transfer and pressure difference conditions. Operation using this system ensures automatic regulation of the thermal loading according to the specified roof and air regenerator temperatures, taking into account the actual technological features of each melt with relation to their influence on the furnace temperature conditions (the coefficient of air excess, the valve reversal interval, the pressure in the working space and the distribution of the products of combustion between the regenerators are automatically regulated); when units have been developed for controlling bath temperature and incomplete fuel combustion, these can easily be added to the system. The specific fuel consumption is considerably reduced (by 6% according to preliminary figures), and furnace productivity and life are increased, when the system is used in 150-ton furnaces. When adjusted suitably, the system can work normally in furnaces whose working is deranged in various ways. (Author)

Vagramyan, A. T. and Kudryavtsev, N. T.
RECENT ADVANCES IN ELECTROPLATING. [1962] 12p.
Order from ATS $16.75 ATS-28P61R

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1958, v. 3, no. 4, p. 471-476.

DESCRIPTORS: *Electroplating, Plating, Finishes, Metallurgy.

Vinogradov, Yu. A.
IMPROVING THE OPERATION OF THE HOT-BLAST STOVES OF A BIG CAPACITY BLAST FURNACE. May 62.
Order from MT $4.50 MT Trans-232

Trans. of #Metallurg (USSR) 1961, v. 6, no. 9, p. 5.

DESCRIPTORS: *Blast furnaces, *Heaters, Operation.

Yasnogorodskii, I. Z.
HEATING OF METALS AND ALLOYS IN ELECTROLYTES, CHAPS. 1-4. 21 Feb 62 [195]p.
FTD-TT-61-10; AD-273 410.
Order from OTS or SLA $13.50 62-23662

Unedited rough draft trans. of mono. Nagrev Metallov i Splavov v Elektrolite, Moscow, 1949, p. 1-125. Another trans. of chap. 2, sects. 1 and 2 is available from HB $8.80 as HB-3210.

DESCRIPTORS: *Alloys, *Metals, *Heating, *Electrolytes, Electric currents, Electric potential, Textbooks, Industrial equipment, Automation, Industrial plants, Hardening, Soldering, Welding, Metal forming presses.

Zaruba, I. I., Dudko, D. A., and Potap'evskii, A. G.
APPAREIL SEMI-AUTOMATIQUE POUR LE SOUDAGE AVEC DU FIL FIN EN ATMOSPHÈRE PROTECTRICE DE CO^2 (Poluavtomat dlya Svarki Tonkoi Provodokoi v Zashchitnoi Srede Uglekislogo Gaza)

[Semi-Automatic Machine For Welding By Means of Thin Wire in a Protective Atmosphere of Carbon Dioxide] tr. by B. de Trezvinsky. 10 Jan 62 [8]p. (Russian text included) 1 ref. CEA Trans. no. R 1470 (text in French).
Order from OTS or SLA $1.10 62-24586

Trans. in French of Avtomaticheskaya Svarka (USSR) 1958, v. 11, no. 3, p. 83-85.

DESCRIPTORS: *Machines, *Welding, Wire, Atmosphere, Carbon dioxide.

Ferrous Metals

Adaryukov, G. I.
A SOVIET DELEGATION'S OBSERVATIONS ON BRITISH BLAST FURNACE PLANTS. Aug 57 [9]p. BISI Trans. no. 640; NLL M. 4131.
Order from OTS or SLA $1.10 62-24138

Trans. of #Metallurg (USSR) 1957 [v. 2] no. 3, p. 45-48.

DESCRIPTORS: *Blast furnaces, *Cast iron, Production, Ores, Smelting, Great Britain, Coke.

We had the opportunity of visiting seven of the largest fully-integrated works. Some 50% of the total pig iron production in Britain is produced by the blast-furnace at these works. Most British metallurgical works produce less than one million tons of pig iron per annum, the annual output at the largest works, Margam - Abbey at Port Talbot, is 1.5 million tons pig iron. British works can be divided into two groups according to the ores they smelt; those in the central region, working home ores containing 22-35% Fe, and works situated near the coast which use mainly imported ores containing 57% Fe. At present about 60% of the total pig iron produced in Britain is made from ores imported from Sweden, France, N. Africa and other countries. About 75% of the coke is produced from local coals in coke ovens which form part of the metallurgical works, and the rest of the coke is produced in separate coking plants. The advanced technological operating methods which are used at our [Soviet] works find little application in England. Only three furnaces are working with high top pressure (No. 2 at Clyde Iron Works, and furnaces at Bilston and Consett), the pressure being maintained at only 5.9 lb/in^2 gauge. (See also 62-24137)

Andreeva, A. G. and Gulyaev, A. P.
CARBURIZATION OF STAINLESS STEELS. Apr 62.
Order from HB $2.50 HB-5323

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 3, p. 7-11

DESCRIPTORS: *Stainless steel, Carbon, Heat treatment, Hardness.

Antonov, S. N.
ULTRASONIC INSPECTION OF WELDMENTS AT THE LENINGRAD METAL WORKS [Ul'trazvukovoi Kontrol' Svarnykh Konstruktsii na Leningradskom Metallicheskom Zavode]. Apr 62, 2500 words.
Order from HB $6.25 HB-5053

Trans. of Svarochnoe Proizvodstvo (USSR) 1958, no. 5, p. 34-36.

DESCRIPTORS: *Welds, *Ultrasonics, Test methods, Non-destructive testing, *Welded joints, Steel, Steel castings.

Archakov, Yu. I., Grebeshkova, I. D., and Teodorvich, V. P.
DETERMINATION OF THE RATE OF DIFFUSION OF HYDROGEN THROUGH 1Kh18N9T (CHROME-NICKEL-TITANIUM) GRADE STEEL AT HIGH TEMPERATURES AND PRESSURES. [1962] 6p.
Order from ATS $7.50 ATS-35P60R

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 4, p. 821-825.
An unedited rough draft trans. is available from OTS or SLA $1.10 as 61-27834, MCL-1183, 27 July 61 [10]p.

DESCRIPTORS: *Steel, *Hydrogen, *Diffusion, Temperature, Pressure.

For abstract see Technical Translations 6: 696, 1961.

Bardin, I. P., Trekalo, S. K. and others.
SMELTING OF BASIC IRON WITH OXYGEN-ENRICHED BLAST. Oct 57, [35]p. BISI Trans. no. 694; NLL M. 4183.
Order from OTS or SLA $3.60 62-13183

Trans. of Stal' (USSR) 1957, v. 17 [no. 8] p. 673-684.

DESCRIPTORS: *Blast furnaces, Oxygen, *Iron, Smelting, Production.

The experimental smelting of open hearth iron with oxygen-enriched blast on the No. 4 NTMK furnace was designed to show the influence of this type of blast on the driving and general working of a blast furnace of large dimensions and normal lines, carrying a prepared burden with a low proportion of slag-forming constituents. The blast furnace working on oxygen enriched blast drove steadily and smoothly without any increase in the moisture content of the blast, but with the blast temperature raised by 35° to 45° as against normal practice. Enriching the blast enabled the furnace to be driven harder within the limits of maintaining a steady production of gas per unit time. While working on enriched blast normal distribution of the gas-flow across the section of the furnace was preserved, which was a basic factor in preserving the low relative coke consumption achieved with normal blast. Enriching the blast leads to a shortening of the region of moderate temperatures (800° to 1100°) in the stack of the furnace on account of the increase in the zones of low and high temperatures (above 1100°); in spite of this the concentration of carbon-dioxide grows progressively up the height of the furnace more steeply

than with normal blast, as a result of the increase in reducing power of the gas. With the blast enriched to 23.3% oxygen over a period of 14 days working, the iron production increased by 6.7% without any change in coke rate.

Bastien, P.
METALLURGICAL FACTORS IN THE MACHINABILITY OF STEELS. May 62.
Order from BISI £4 10s BISI-2717

Trans. of Revue de Métallurgie (France) 1961, v. 58 [no. 11] p. 981-990.

DESCRIPTORS: *Steel, Machining, Metallurgy.

Bezdenezhnykh, A. A., Bigeev, A. M. and others.
IMPROVEMENTS IN THE TECHNOLOGY OF THE DEOXIDATION OF RIMMING WHEELS. Apr 58 [16]p. 5 refs. BISI Trans. no. 703; NLL M. 4182.
Order from OTS or SLA $1.60 62-13182

Trans. of Stal' (USSR) 1957 [v. 17] no. 8, p. 701-707.

DESCRIPTORS: *Steel, Manganese alloys, Deoxidation, Production, Open hearth furnaces.

The new procedure adopted at the open hearth furnaces at Magnitorgorsk for deoxidation of low carbon rimming steel by charging the entire quantity of ferromanganese (with less than 1% Si content) into the furnace at the beginning of tapping, results in a considerable saving of ferromanganese whilst ensuring normal boiling of the metal in the mould. It also excludes another factor, which has a great influence on the loss of manganese by combustion and is difficult to control, namely retaining the melt in the furnace after the introduction of ferromanganese. The determination of the quantitative effect of the influence of major factors on the loss of manganese by combustion in the deoxidation of low-carbon rimming steels in the 400-ton furnaces, achieved in the course of this investigation, allowed the construction of tables for use in industry for calculation of the ferromanganese consumption in deoxidation. The adoption of the new process of deoxidation and the method of computing ferromanganese consumption has afforded the possibility of reducing ferromanganese consumption in deoxidation by approximately 1.0 to 1.5Kg/t and of avoiding variations of manganese content of ladle samples. (Author)

Bul'skii, M. T. and Sidel'kovskii, M. P.
AZOVSTAL' RESEARCH PROJECTS. Apr 62.
Order from BISI £4 BISI-2232

Trans. of Stal'(USSR) 1956 [v. 16] no. 8, p. 746-748.

DESCRIPTORS: *Steel industry, *Industrial research.

Bungardt, K., Müllders, O., and Schmidt, W.
SUITABILITY OF A STATIC BENDING TEST FOR THE DETERMINATION OF TOUGHNESS OF VERY HARD STEELS. June 62.
Order from BISI £4 15s BISI-2718

Trans. of Stahl und Eisen (West Germany) 1959, v. 79 [no. 18] p. 1258-1263.

DESCRIPTORS: *Steel, Mechanical properties, Test methods.

Calmettes, J., Bois, C., du, and Bastien, P.
CRITICAL STUDY OF THE DETERMINATION OF HYDROGEN IN STEEL. [1962] [26]p. 11 refs.
Order from SLA $2.60 62-14550

Trans. of Revue de Métallurgie. Mémoires Scientifique (France) 1959, v. 56, no. 7, p. 641-655. Another trans. is available from BISI £7 10s as BISI-1563 [1960].

DESCRIPTORS: *Steel, Metallurgical analysis, *Hydrogen, Determination.

The Association Technique de la Siderurgie set up, in 1956, a National Commission for the Determination of Gases in Steels. On the initiative of the National Centre of Metallurgical Research (CNRM) (Liege Section) an International Commission has been meeting every three months since June 1957, and is attended by delegates from the various National Commissions in Europe. The aim of these two Commissions (French and International) is not to standardise a method of procedure, but solely to define the conditions which must be strictly observed in order that the determinations should be comparable from one laboratory to another. We report the conclusions reached, whether the work was carried out separately, or collectively in accordance with a programme drawn up by the French and International Commissions. (Author)

Ch'iu, Ju-chi'ih.
THE PRELIMINARY CLASSIFICATION OF CHINA'S NEW ALLOY STEEL SYSTEM AND THE PROPERTIES AND CHARACTERISTICS OF ITS MAJOR TYPES. 3 Apr 62 [27]p. FTD-TT-61-71.
Order from OTS or SLA $2.60 62-24781

Unedited rough draft trans. of Kang T'ieh (Chinese People's Republic) 1959, 27 July, p. 602-608.

DESCRIPTORS: *Steel, Steel industry, Alloys, Classification, Standards, *Tool steel, *Stainless steel, *Boron steel, *Manganese steel, Production, *China.

Colombier, L.
EFFECT OF BORON ON THE CREEP PROPERTIES OF 18-8 STEELS. [1962] [4]p.
Order from SLA $1.10 62-16204

Trans. of Revue de Metallurgie (France) 1960, v. 57 [no. 12] p. 1105-1106.

DESCRIPTORS: *Steel, *Creep, *Boron, Castings, Rupture, Chemical reactions, Tests, Statistical analysis, *Heat resistant alloys.

Devernay, M.
ELECTRICAL FIRING OF CONVERTER BOTTOMS IN MASS. Mar 62.
Order from BISI £2 15s BISI-2559

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1960 [v. 17] no. 11, p. 2415-2425.

DESCRIPTORS: *Blast furnaces, *Steel industry, Manufacturing methods, Electrical equipment.

Edelmann, K.
THE USE OF SLIT STRIP IN MILLED AND RIMMING STEEL QUALITY FOR THE MANUFACTURE OF LONGITUDINAL SEAM WELDED TUBES. Apr 62.
Order from BISI £3 15s BISI-2670

Trans. of Neue Hütte (East Germany) 1961, v. 6 [no. 2] p. 81-87.

DESCRIPTORS: *Steel tubing, *Boiler tubes, *Steel, Pipes, Welded joints, Production.

Funke, P. Sr. and Funke, P. Jr.
EVALUATING THE LIFE OF COLD ROLLS. [1962] [19]p. 10 refs.
Order from SLA $1.60 62-14326

Trans. of Stahl und Eisen (West Germany) 1959 [v. 79, no. 20] p. 1412-1419.

DESCRIPTORS: *Rolling mills, *Steel, Friction, Life expectancy.

In order to study the working behaviour of cold rolls by means of simple operational methods, special check cards were devised for comparing and representing diagrammatically the diameter loss on grinding during the working life of the roll. It could be seen from all the examples that this simple method (1) shows the moment at which a roll becomes uneconomic, i.e. at which it should be re-hardened, (2) permits a comparison between different types of load, and (3) permits a comparison between the same rolls from different manufacturers. (Author)

Garcia, P. and Syre.
DEVELOPMENT AND TECHNIQUES OF THE DOLOMITE DEPARTMENT AT SIDELOR-HOMECOURT. May 62.
Order from BISI £3 10s BISI-2740

Trans. of Centre de Documentation Siderurgique. Circulaire d'Informations Techniques (France) 1960, v. 17, no. 3, p. 673-683.

DESCRIPTORS: *Dolomite, Steel industry, Blast furnaces.

Gulyaev, A. P. and Zelenova, V. D.
DISTRIBUTION OF CARBON IN THE CARBURIZED SURFACE OF ALLOY STEELS. Apr 62.
Order from HB $2.75 HB-5322

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 3, p. 2-7.

DESCRIPTORS: *Steel, Alloys, *Carbon, Surfaces, Heating.

Gulyaev, B. B., Borovskii, Yu. F. and others.
AN INVESTIGATION OF INCLUSIONS IN INGOTS BY MEANS OF ISOTOPES. Jan 58 [8]p. BISI Trans. no. 765; NLL M. 4165.
Order from OTS or SLA $1.10 62-24172

Trans. of Liteinoe Proizvodstvo (USSR) 1956, no. 8, p. 25-27.

DESCRIPTORS: *Castings, Impurities, Isotopes, Steel, Cast iron, Contamination.

Experiments indicated that if the temperature of the poured metal is sufficiently high and the moulding mixture has a low strength, there is indeed a washing wear of the surface layers of the gating-system channels giving rise to inclusions in the ingots. This wear is more severe at the bends and is least on horizontal sections. The introduction of radio-active isotopes into the moulding mixture is a convenient and effective method of studying the origin of inclusions in ingots.

Gulyaev, V. N., Akol'zin, P. A. and others.
STRESS-CORROSION CRACING OF STEEL 1Kh18N9T (CHROME-NICKEL-TITANIUM) IN SODIUM HYDROXIDE AND SODIUM CHLORIDE SOLUTIONS [Korrozionnoe Rastreskivanie Stali 1Kh18N9t v Rastvorakh Edkogo Natra i Khloristogo Natriya]. [1962] 11p.
Order from ATS $17.00 ATS-49P60R

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 9, p. 50-55.
Another trans. is available from OTS or SLA $1.60 as 62-25463, RTS-2082, July 62 [14]p.

DESCRIPTORS: *Steel, Stresses, Corrosion, Fracture (Mechanics), Solutions, Sodium compounds, Hydroxides, Chlorides.

Inouye, Katsuro.
STUDIES ON THE HOT-WORKING STRENGTH OF STEELS. II. HIGH-TEMPERATURE DEFORMATION STRENGTHS OF VARIOUS STEELS. [1962] [11]p. 10 refs.
Order from SLA $1.60 62-14170

Trans. of Tetsu to Hagane (Japan) 1955, v. 41, no. 6, p. 593-601.
Another trans. is available from BISI £ 8 as BISI-1430 [1960].

DESCRIPTORS: *Steel, Heat treatment, Deformation, Temperature, Mechanical properties.

Some 15 steels (almost all the steels currently used for steel tubes) were tested to determine the way deformation resistance varies with degree of working, deforming speed, and temperature. The following general equation is derived for deformation resistance: $\sigma = K. \varepsilon^{n}. \dot{\varepsilon}^{m}. \exp[A/T_k]$, where K, n, m, and A are constants that are governed by the quality of each steel, and σ is true stress and ε is log strain.

Kaplan, A. S., Kozlova, N. N., and Krylova, A. R.
NEW STEELS AND ALLOYS. 28 May 62 [7]p.
JPRS: 13978.
Order from OTS or SLA $1.10 62-25002

Trans. of Standartizatsiya (USSR) 1962, no. 2, p. 50-52.

DESCRIPTORS: *Steel, *Alloys, Heat resistant alloys, Corrosion resistant alloys, High temperature research, Stainless steel.

Kasumzade, N. G.
CHANGES IN STRUCTURE AND PROPERTIES UNDER THE ACTION OF PRESSURE EXERTED ON LIQUID STEEL IN CLOSED-TOPPED MOLDS. Feb 62, 1100 words.
Order from HB $3.30 HB-5248

Trans. of mono. [Izmenenie Struktury i Svoistv Stali pod Vliyaniem Fiziko-Khimicheskikh Faktorov, Deistvuyushchikh pri Razlivke] Baku, 1957, pt. 3, chap. 7, p. 336-340.

DESCRIPTORS: *Steel castings, Liquid metals, Molding, Gases, Pressure.

Kazantsev, E. I. and Strelets, M. N.
TEMPERATURE DISTRIBUTION IN AN INGOT DURING HEATING IN REGENERATIVE SOAKING PITS. Jan 58 [9]p. 2 refs. BISI Trans. no. 533; NLL M. 4157.
Order from OTS or SLA $1.10 62-24164

Trans. of Stal' (USSR) 1957 [v. 17] no. 4, p. 358-361.

DESCRIPTORS: *Castings, *Steel castings, Heating, Temperature, Surfaces, Melting, Heat of fusion.

Experiments on the quality of ingot heating in regenerative soaking pits showed how the non-symmetry of heating changes at various stages; and indicated the conditions for preventing the surface fusion of ingots of mild rimming steel. (Author)

Kharash, L. I., Shinyakov, M. I., and Elyasberg, S. I.
PROBLEMS IN SINTER PRODUCTION (INCLUDING A DESCRIPTION OF A 2000 SQ. FT. MACHINE). Feb 58 [22]p. 6 refs. BISI Trans. no. 761; NLL M. 4267.
Order from OTS or SLA $2.60 62-24173

Abridged trans. of Stal' (USSR) 1957 [v. 17] no. 2, p. 106-114.

DESCRIPTORS: *Sintering, Machines, Design, Steel industry, Iron industry.

Whenever sinter plants are built with a total sintering area of 200 sq m and over (allowing for possible extensions), it is advantageous to use sintering machines with a sintering area of 2153 sq ft. (Author)

Klyachko, Yu. A. and Shapiro, M. M.
THE DETERMINATION OF THE TITANIUM NITRIDE IN STEEL, tr. by J. H. Dixon. Aug 58 [6]p. BISI Trans. no. 1048; NLL M. 4076.
Order from OTS or SLA $1.10 62-24091

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23, no. 2, p. 140-143.

DESCRIPTORS: *Steel, *Titanium compounds, *Nitrides, Determination, Impurities, Separation, Microanalysis, Solids, Solutions.

Kolosov, M. T., Aizenshtok, I. Ya. and others.
IMPROVING THE QUALITY OF BALL BEARING STEEL. May 58 [20]p. 14 refs. BISI Trans. no. 805; NLL M. 4121.
Order from OTS or SLA $1.60 62-24128

Trans. of Stal' (USSR) 1955 [v. 15] no. 5, p. 431-438.

DESCRIPTORS: *Steel, Inclusions, Quality control, Casting, Electric furnaces, Manufacturing methods.

Intensive investigations, carried out to a large extent at the Chelyabinsk Metallurgical Works, to improve the quality of ball bearing steel led practically to the elimination of rejects due to non-metallic inclusions. Ball bearing steel manufactured with boiling, is freer from oxide inclusions than remelted steel, especially in large profiles. Diffusion deoxidation by carbide slag and ground ferro-silicon no longer satisfies the growing demand of the users for the improvement of the quality of ball bearing steel; it is necessary to perfect it. The work of improving the technology of casting steel must be conducted mainly along the following lines: abolition of bottom pouring which contaminates the metal with inclusions; introducing the use of immersion thermocouples for melting and pouring ball bearing steel at optimum temperature; and appreciable improvement in the quality of ladle and syphon refractories as applied to ball bearing steel. The check for non-metallic inclusions must be done throughout the height of the ingots coming from the last syphon filled moulds.

Koslitin, G. I. and Kolybalov, I. N.
DESIGN OF THE MOULD FOR THE CONTINUOUS CASTING OF STEEL. July 57 [9]p. BISI Trans. no. 559; NLL M. 4147.
Order from OTS or SLA $1.10 62-24154

Trans. of Stal' (USSR) 1957, v. 17, no. 3, p. 209-213.

DESCRIPTORS: *Cast steel, *Stainless steel, *Molding, Machines, Design.

The use of a mould with reciprocating action prevents the sticking of the billet, a steadier casting of the steel and improved quality in the billets. The new design is also accompanied by weight and cost reduction. (Author)

Koval'chuk, E. I. and Popov, G. I.
SERVICE LIFE OF REFRACTORY LININGS IN OPEN-HEARTH FURNACES WORKING WITH OXYGEN. Feb 59 [10]p. BISI Trans. no. 1169; NLL M. 4301.
Order from OTS or SLA $1.10 62-24188

Trans. of Stal' (USSR) 1958 [v. 18] no. 10, p. 890-893.

DESCRIPTORS: *Combustion chamber liners, *Refractory materials, *Life expectancy, Open hearth furnaces, Oxygen, Steel industry.

The use of oxygen in steel production renders the service conditions of the refractory linings of furnaces more severe and shortens their service life, especially when the bath is blown. To increase the life of furnaces working with oxygen it is essential: (1) to improve the construction of the skewback suspended roof of the furnace with a compensating arrangement for the linear expansion of the magnesite-chromite brick, (2) to replace the dinas linings of the slag pockets, fantails and part of the regenerator arches with magnesite-chromite, (3) to line the regenerator walls with chrome-magnesite, (4) to increase the height of the upper checker space and improve the scraping of the checkers during operation, (5) to improve the quality of the brick for arches by increasing its density, its volume stability at 1700°, and the temperature of the onset of deformation under load, (6) to improve the maintenance of the furnace during operations (blowing the roof with air, coating the columns of the front walls, repairing the ledges of the caissons, the walls of the slope etc.), and (7) to continue to improve the devices for blowing the bath with oxygen and the method of its introduction into the bath.

Kozakevitch, P. and Urbain, G.
SURFACE TENSION OF LIQUID IRON AND ITS ALLOYS. I. EXPERIMENTAL TECHNIQUE AND RESULTS ON PURE IRON AT 1550°C. Feb 62.
Order from BISI £4 10s BISI-2609

Trans. of Rev[ue de] Met[allurgie]. Mém[oires] Sci[entifiques] (France) 1961, v. 58, June, p. 401-413

DESCRIPTORS: *Iron, *Iron alloys, *Liquid metals, *Surface tension, High temperature research.

Krainer, H. and Krainer, E.
EVALUATION OF FLAWS IN ULTRASONIC TESTING. [1962] [10]p. 12 refs.
Order from SLA $1.10 62-14544

Trans. of Schweisstechnik (Austria) 1958, v. 12, no. 3, p. 28-32.

DESCRIPTORS: *Non-destructive testing, *Ultrasonics, *Steel, Welds, Castings.

In non-destructive testing the interpretation of measured results plays a decisive role, especially where indirect testing methods are concerned. Experiments on test-pieces afford a valuable control on the interpretation of signals. Detailed experiments are described on test-pieces under ultrasonic test. First, reproduceability was tested; scatter must be taken into account in borderline cases. The degree of dependence of the ratio of flaw echo to back echo on flaw size, shape and distance compares well with theoretical expectation; as the size of the piece increases the sensitivity decreases linearly. Experiments on the relationship of flaw signals to the position of the flaw in relation to the sonic beam show that the testing of cylindrical bodies in only two or three directions is not always sufficient. (Author)

Klpper, K. and Öhler, H.
THE FORGING PROGRAMME OF A LARGE INTEGRATED STEELWORKS AND THE LAYOUT OF THE FORGING PLANT REQUIRED TO CARRY IT OUT. Apr 62.
Order from BISI £6 BISI-2561

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, 31 Aug, p. 1172-1179.

DESCRIPTORS: *Steel industry, *Forging, *Steel, Manufacturing methods.

Lenorskii, V. V., Kapustin, E. A. and others.
A COMPARISON BETWEEN TILTING AND FIXED FURNACES. Aug 57 [7]p. 5 refs. BISI Trans. no. 635; NLL M. 4132.
Order from OTS or SLA $1.10 62-24139

Trans. of Stal' (USSR) 1957 [v. 17] no. 5, p. 411-413.

DESCRIPTORS: *Open hearth furnaces, Steel industry, Iron industry.

Lifshits, S. I. and Sochan, I. F.
EXPERIENCE OF THE USE OF OXYGEN IN 250-TON OPEN-HEARTH FURNACES. [1957] [11]p. BISI Trans. no. 736; NLL M. 4172.
Order from OTS or SLA $1.60 62-13194

Trans. of Stal' (USSR) 1957 [v. 17] no. 5, p. 402-405.

DESCRIPTORS: *Open hearth furnaces, Oxygen, Gas flow, Heating, *Iron, Melting, *Steel, Rolling mills.

Research into the intensified working of open-hearth furnaces has shown that it is plainly most effective when oxygen is fed into the fuel stream during charging, initial heating and the pouring in of iron, and onto the bath during melting through a Laval-type nozzle passed through the caisson walls at an angle of 15-18° to the horizontal. (Author)

Lombardini, J.
THE EFFECT OF BORON ON THE STRUCTURAL STABILITY OF WELDABLE, CREEP-RESISTANT, 16/13 CrNiW STEELS. Feb 62.
Order from MT $28.70 MT Trans-196

Trans. of Zvaracsky Sbornik (Czechoslovakia) 1960, v. 9, no. 1, p. 51-68.

DESCRIPTORS: *Steel, Chromium alloys, Nickel alloys, Tungsten alloys, Creep, Resistance, Welding, Stability, Microstructure, *Boron.

Masin, A.
THE IMPORTANCE OF DISLOCATIONS AT THE CRYSTAL BOUNDARIES OF TEMPERED MARTENSITE FOR THE MECHANISM OF "TEMPER BRITTLENESS". Apr 62.
Order from BISI £1 15s BISI-2655

Trans. of Acta Metallurgica (U. S.) 1959, v. 7, Mar, p. 227-228.

DESCRIPTORS: *Martensite, *Steel, Grains (Metallurgy), Dislocations.

Melon, P.
ROLLS FOR COLD ROLLING. [1959] [11]p.
Order from SLA $1.60 62-14335

Trans. of Revue Universelle des Mines (France) [1945] ser. 9, v. 1 [no. 2/3]p. 128-137.
Another trans. is available from BISI £5 5s as BISI-1231 [1959].

DESCRIPTORS: *Steel, *Rolling mills, Metals, Sheets, Surfaces, Hardness.

Details are given of metals which can be cold rolled, together with the uses, quality and hardness of cold rolled strip. The composition, fatigue strength, hardness, maintenance and defects of steel rolls for cold rolling are described. (Author)

Messin, G.
APPLICATION OF LD (BASIC OXYGEN) PROCESS TO HIGH PHOSPHORUS PIG IRON: TECHNIQUE USED AT POMPEY STEELWORKS. Apr 62, 1300 words.
Order from HB $3.00 HB-5290

Trans. of Revue de Métallurgie (France) 1960, v. 57, no. 10, p. 947-954.

DESCRIPTORS: *Cast iron, Processing, Phosphorus, Oxygen, *Steel industry.

Michel, A.
THE BONDING IN CEMENTITE, Fe_3C. [1962] 3p.
Order from ATS $3.85 ATS-26P60F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1959, v. 248, no. 10, p.1528-1530.

DESCRIPTORS: *Iron compounds, *Carbides, Bonding, Steel, Cast iron.

Molotkov, V. A. and Fetisov, S. G.
INVESTIGATION OF THE HETEROGENEITY OF INGOTS FOR SPECIAL STEEL PLATE. Mar 62.
Order from BISI £3 15s BISI-2604

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Met[allurgiya] (USSR) 1961, no. 9, p. 71-78.

DESCRIPTORS: *Castings, *Steel, *Metal plates.

Münch, Gunther.
METHODS AND EQUIPMENT FOR MEASURING STRIP THICKNESS AND WIDTH IN HOT AND COLD ROLLING MILLS. [1962] [34]p.
Order from SLA $3.60 62-14540

Trans. of Stahl und Eisen (West Germany) 1959, v. 79 [no. 22] p. 1601-1615 (Verein Deutscher Eisenhuttenleute (West Germany). [Berichte]-61 and 264).

DESCRIPTORS: *Rolling mills, *Steel, Measurement, Instrumentation, Thickness, Gages.

Naumann, F. K.
THE EMBRITTLEMENT OF THE EDGES OF SHEARED, HEAVY PLATES OF BASIC CONVERTER AND OPEN-HEARTH STEEL. II. LABORATORY TESTS. May 62.
Order from BISI £6 BISI-2569

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, no. 22, p. 1464-1472.

DESCRIPTORS: *Steel, Physical properties, Brittle materials, Hydrogen embrittlement, Open hearth furnaces.

Nikolaichik, N. P. and Nikolaichik, E. [N.].
CALORISING OF CAST IRON INGOT MOULDS [Alitirovanie Chugunnykh Izlozhnits]. July 59 [8]p.
BISI Trans. no. 725; NLL M. 4178.
Order from OTS or SLA $1.10 62-13203

Trans. of Stal' (USSR) 1957 [v. 17] no. 6, p. 571-[573].

DESCRIPTORS: *Cast iron, *Castings, *Molding, *Calorimetry, Fracture (Mechanics), Life expectancy.

The use of calorising protects the internal surface of ingot moulds from crazing and more than doubles their life. Moulds which failed due to crazing ought to be calorised. (Author)

Obst, K. H., Köhler, W. and others.
THE USE OF DIFFERENT GRADES OF LIME IN OPEN-HEARTH STEELMAKING. June 62.
Order from BISI £4 5s BISI-2803

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 23] p. 1503-1510.

DESCRIPTORS: *Calcium compounds, *Oxides, Open hearth furnaces, *Steel, Production.

Pejcoch, O. and Cerveny, J.
DEVELOPMENT OF THE PRODUCTION OF HIGH QUALITY GRADES OF SEAMLESS TUBES FOR PETROLEUM EXTRACTION AND GEOLOGICAL RESEARCH. [1962] [13]p. 10 refs.
Order from SLA $1.60 62-14527

Trans. of Hutnicke Listy (Czechoslovakia) 1958, v. 13, no. 1, p. 2-8.

DESCRIPTORS: *Steel tubing, *Pipes, Production, Quality control, Mechanical properties, Heat treatment, Petroleum industry, Geophysical prospecting

For the production of oil pipes and tubes for geological research with a high yield stress (of quality grades API N80 and E and marks E_M and E in accordance with GOST) a production technique was developed, with a view to economy in the use of alloying elements and a method of heat treatment acceptable under production conditions, and the production of these tubes from carbon steel based on Mn was introduced. The required values of the mechanical properties for the whole of this grade of tubes with a high yield point were obtained by normalising heat treatment and quenching and tempering. The tubes with a greater wall thickness are only subjected to normalising heat treatment with subsequent separate cooling on the cooling bed to obtain the required high cooling rate. Tubes with a lesser wall thickness are tempered after normalising heat treatment; the level of the tempering temperature is graded according to the wall thickness of the tubes. The required mechanical properties for tubes with a high yield point are obtained in the whole quality range of this grade of tubes and over the whole range of wall thicknesses with a sufficient operational margin. The mechanical properties of the upset ends of the tubes and the high notch impact strength even at low temperatures ensure the high reliability and safety of these tubes during their operational use. (Author)

Poissonnier, H.
USE OF UNFIRED CONVERTER BOTTOMS AT THE MICHEVILLE WORKS OF SIDELOR. Mar 62.
Order from BISI £1 10s BISI-2560

Trans. of Centre [de] Doc[umentation] Sider[urgique]. Circ[ulaire d'Informations Techniques]. (France) 1960 [v. 17] Nov, p. 2327-2429.

DESCRIPTORS: *Blast furnaces, *Steel industry, Manufacturing methods.

Popov, A. A.
TTT DIAGRAMS OF 20Kh2N4A AND 18Kh2N4VA STEELS: DATA SHEET, Apr 62.
Order from HB $2.00 HB-5407

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 5, p. 31-34.

DESCRIPTORS: *Steel, Processing, Chemical analysis, Carbon, Heating.

Popov, V. A.
THE TECHNOLOGICAL REQUIREMENTS FOR AUTOMATION OF WIRE AND WIRE PRODUCTS PRODUCTION, tr. by J. Murray. 24 Feb 58 [6]p. [BISI] Trans. no. 857; NLL M. 4114.
Order from OTS or SLA $1.10 62-24121

Trans. of Stal' (USSR) 1957 [v. 17] no. 12, p. 1128-1130.

DESCRIPTORS: *Wire, *Steel wire, Production, Automation, Specifications, Bolts, Nuts (Mechanics), Metal screws, Rivets, Powder metallurgy, Dies.

The development of the wire products industry in the direction of the erection of works with automation lines must be accompanied (a) by changes and additions to the standard specifications to facilitate mass production of fastenings made from wire and (b) by the extensive adoption of hard alloy tool mounts. (Author)

Popova, N. M. and Zaslavskaya, L. V.
DETERMINATION OF FREE AND CARBIDE CARBON IN AUSTENITIC CHROMIUM-NICKEL STEEL. Aug 57 [7]p. 3 refs. BISI Trans. no. 532; NLL M. 4158.
Order from OTS or SLA $1.10 62-24165

Trans. of Zavodskaya Laboratoriya (USSR) 1955, v. 21, no. 11, p. 1285-1288.

DESCRIPTORS: *Steel, *Nickel alloys, *Chromium alloys, Heat treatment, *Carbides, Oxidation, *Carbon, Determination, Reagents, Solids, Solutions, Dyes, Absorption.

A method of determining separately the free carbon and carbide carbon in the residues from the electric solution of steels is proposed which is characterised by its extreme simplicity (absorption of a dye on the surface of the free carbon). Preliminary studies indicate that the concentration of carbon in solid solution decreases with increasing tempering temperature for a holding period of 5 hr, attaining 0.05 to 0.08% at 900°C for the steel investigated. Bromthymol blue constitutes a specific reagent for carbon derived from solid solution, there being a quantitative relation between the amount of this carbon and the quantity of dye absorbed. The absorptive properties of amorphous carbon separated by anodic solution of steel from austenite and martensite are the same.

Probedin, I. S. and Prichodko, I. Ph.
MACHINES FOR THE MARKING OF BLOOMS AND SLABS. Oct 57 [11]p. BISI Trans. no. 717; NLL M. 4180.
Order from OTS or SLA $1.60 62-13188

Trans. of Stal' (USSR) 1957 [v. 17, no. 4] p. 333-340.

DESCRIPTORS: Rolling mills, *Steel industry, *Machines, *Markers, Castings.

As a result of the investigations of the main methods and systems for the automatic marking of blooms and slabs on the end-face, and the working conditions of

stamping machines during the transfer of billets it is known that certain machines exist for the stamping of the rolled stock whilst still on the roller table after shearing has taken place. This is supplemented by an arrangement for the automatic changing of the marking stamps, particularly illustrated in the design of the machine used by the Central Research Institute for Engineering and Technical Machinery. (Author)

Raspopov, I. V., Kulikov, Ya. P. and others.
SMELTING OF FLUXED SINTER MADE FROM KRIVOI ROG IRON ORES, tr. by J. Murray. Sep 57 [9]p. BISI Trans. no. 681; NLL M. 4127.
Order from OTS or SLA $1.10 62-24134

Trans. of Stal' (USSR) 1957 [v. 17, no. 2] p. 99ff.

DESCRIPTORS: *Sinters, *Smelting, *Iron, *Ores, Blast furnaces, Coke, Consumption, Reduction.

The substitution of ordinary sinter in the blast-furnace burden by a fluxed sinter with a basicity 1.0 - 1.2 makes it possible to reduce the coke consumption by approximately 16% and the net cost of the metal by 10%, the furnace producivity being increased at the same time by 8.3% and the flue dust losses reduced. (Author)

Rousseau, P.
INFLUENCE OF THE CHEMICAL COMPOSITION AND IN PARTICULAR THE CARBON CONTENT ON WELDABILITY. May 62.
Order from BISI £3 15s BISI-2747

Trans. of Revue de Metallurgie (France) 1961, v. 58 [no. 6] p. 527-535.

DESCRIPTORS: *Steel, *Carbon, Chemical analysis, *Welding.

Rozanov, M. P. and Rusanova, E. I.
SOME RESULTS OF STRESS TO RUPTURE INVESTIGATIONS UNDER CONDITIONS OF VARIABLE STRESS AND TEMPERATURE. Apr 62.
Order from BISI £4 5s BISI-2066

Trans. of Energomashinostroenie (USSR) 1960 [v. 6] no. 11, p. 36-39.

DESCRIPTORS: *Steel, Stresses, Rupture, Temperature.

Ryabin'kii, B. K.
DEVELOPMENT OF THE IRON AND STEEL INDUSTRY IN THE U.S.S.R. DURING 40 YEARS OF SOVIET POWER. Dec 57 [11]p. BISI Trans. no. 790; NLL M. 4160.
Order from OTS or SLA $1.60 62-24167

Trans. of Stal' (USSR) 1957 [v. 17, no. 11] p. 961-964.

DESCRIPTORS: *Iron industry, *Steel industry, Production, Blast furnaces, Open hearth furnaces, Rolling mills, Economics.

Ryzhkov, P. Ya., Mitrofanov, A. A. and others.
THE PROPERTIES OF THE METAL PRODUCED IN OXYGEN-BLOWN CONVERTERS, tr. by J. H. Dixon. Nov 58 [10]p. BISI Trans. no. 1083; NLL M. 4071.
Order from OTS or SLA $1.10 62-24086

Trans. of Stal' (USSR) 1958 [v. 18] no. 7, p. 643-647.

DESCRIPTORS: *Steel, Production, Mechanical properties, *Blast furnaces, Open hearth furnaces, Manufacturing methods.

Long experience in the production of converter metal at the Petrovskii works has proved that metal whose composition is similar to that of open-hearth metal, and which is remelted from pig-iron in oxygen-blown basic-lined converters, possesses technological and mechanical properties which are equal to those of open-hearth steel, and satisfies the requirements set by MChTU 5567-56 and State Standards 380-50 and 4231-48 for open-hearth steel. As regards gas content, macro- and micro-structure and rolled stock weldability, converter metal from the melts investigated scarcely differs from open-hearth metal. Impact tests carried out on test pieces made of converter and open-hearth steel rolled stock, at various temperatures and after artificial ageing, did not reveal any significant difference in impact strengths under practically identical test conditions. Ordinary and telegraph wires made of converter metal are of the same quality as wire made from open-hearth metal. (Author)

Saeki, K.
OILS FOR STEEL STRIP ROLLING. June 62.
Order from BISI £10 BISI-2657

Trans. of Yukagaku (Japan) 1961, v. 10, no. 2, p. 83-88.

DESCRIPTORS: *Steel, Rolling mills, *Oils.

Samarin, A. M.
THE VACUUM DEOXIDATION AND DESULPHURIZATION OF TRANSFORMER STEEL. July 58 [14]p. 3 refs. [BISI] Trans. no. 1025; NLL M. 4082.
Order from OTS or SLA $1.60 62-24097

Trans. of mono., Use of the Vacuum in Steel Melting Processes, Moscow, 1957, p. 3-14.

DESCRIPTORS: *Steel, Melting, Deoxidation, Desulfurization, Vacuum furnaces.

When melting transformer steel in vacuum-induction furnaces it is expedient to melt the metallic charge with the furnace open, to add iron ore in order to intensify the oxidation of the carbon, to hold the molten metal in a vacuum for the purpose of removing the phosphorus and sulfur, and to charge the ferrosilicon in a vacuum. Under optimum melt conditions, reduction in the pressure in the furnace space to 1 mm Hg increases the deoxidizing power of the carbon by approximately a hundred times. The rate of removal of oxygen from the molten metal in a vacuum is several times higher than the rate of removal of carbon. The rate of deoxidation and decarburization in a vacuum depends not only on the initial carbon and oxygen concentrations in the

metal, but also on the furnace capacity. When melting transformer steel, holding in a vacuum also ensures the removal of sulfur from the molten metal, while the completeness of desulfurization increases with reduction in the oxygen content of the metal. (Author)

Schenck, H., Schmidtmann, E., and Müller, H.
THE EFFECT OF HEATING CONDITIONS AND ALLOY COMPOSITION ON THE INTERNAL OXIDATION OF IRON ALLOYS. Apr 62.
Order from BISI £ 5 5s BISI-2675

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1960, v. 31, Feb, p. 121-128.

DESCRIPTORS: *Iron alloys, Heating, Chemical analysis, Oxidation.

Schepers, A. and Blumenstein, E. von.
MACHINABILITY TESTS ON DRAWN AND ON DRAWN-NORMALIZED BARS OF OPEN HEARTH STEEL WITH DIFFERENT CARBON AND LEAD CONTENTS. May 62.
Order from BISI £2 15s BISI-2642

Trans. of Stahl und Eisen (West Germany) 1961, v. 81, 31 Aug, p. 1180-1182.

DESCRIPTORS: *Steel, Carbon, Lead, *Machining, Drawing (Machine processing), Open hearth furnaces.

Schinn, R.
HEAT-RESISTANT 12%-CHROMIUM STEEL CASTINGS. [1959] [15]p. 5 refs.
Order from SLA $1.60 62-14444

Trans. of Vereinigung der Grosskesselbesitzer. Mitteilungen (West Germany) 1958, no. 57, p. 397-406.
Another trans. is available from BISI 4 5s as BISI-1421.

DESCRIPTORS: *Steel castings, Chromium alloys, Heat resistant alloys, *Cast steel, Temperature, Heat treatment, Turbines, Steel.

Sejnoha, R.
RESEARCH INTO MATERIAL FOR DRILL PIPE CASINGS WITH A MINIMUM YIELD STRENGTH OF 98 kg/mm^2. [1962] [28]p. 22 refs.
Order from SLA $2.60 62-14536

Trans. of Hutnicke Listy (Czechoslovakia) 1959, v. 14, no. 9, p. 829-840.

DESCRIPTORS: *Steel, *Pipes, *Steel tubing, Production, Mechanical properties, Heat treatment.

Sixteen experimental melts were cast with carbon contents from 0.18 to 0.32% and with various combinations of manganese, silicon and chromium, and one melt was also alloyed with nickel. From the ingots rods were forged, which were subjected to heat treatment which corresponded to the heat treatment of the pipes. The results of the mechanical tests were worked out by means of correlation analysis to produce equations expressing the relationship between the chemical composition and the mechanical property values for the state after hardening and tempering at either 250° or 450° C. The remaining tempering temperatures produced various unfavourable accompanying phenomena (at 300 to 400° C temper-brittleness, and at 500 to 700° C low strength properties or temper-brittleness). The results which were obtained under laboratory conditions on rods, were verified under semi-production conditions on strips welded to pipes and quenched and tempered. On the basis of these experiments two analyses were put forward for EHS 140/150 pipes, of which one is intended for hardening and tempering at 250° C, and the other for hardening and tempering at 450° C.

Shao, Hsiang-hua.
LAMINATION DEFECTS IN RIMMED STEEL SLABS. [1960] [9]p. 7 refs. BISI Trans. 1445; NLL M.4873.
Order from OTS or SLA $1.10 62-25334

Trans. of [Chin Shu Hsüeh Pao] (Chinese People's Republic) 1959, v. 4, no. 1, p. 16-21.
Another trans. is available from BISI £8 15s as BISI-1445 [1960].

DESCRIPTORS: *Steel, Processing, Deformation, Castings, Rolling mills, Impurities.

Since April 1957, while rolling billets at Ansan Steel Mills, large blow holes have been found in the slabs near the head of the ingot. After a very careful examination of the slabs, lamination defects of varying lengths were found along the centre line, mostly less than 1-mm wide although others were wider until they became distinct blow holes. These defects were found below the head of the ingots and led to a great deal of waste. In September 1957 the percentage of waste at the No. 1 Plate Mill on rimmed steel reached 6.75%. A large proportion of these lamination defects came from the 10.7 ton ingots. The causes of the lamination defects were due to: (1) high pressure and central cavities in the head of the ingot, (2) serious segregations around the blow holes, (3) non-metallic inclusions on the surfaces of the blow holes, and (4) poor weldability, which caused the blow holes to join up to form a large hole during subsequent rolling. A small quantity of ferro-silicon was added to an ingot after teeming but the result was not satisfactory. When the pouring temperature was 1515-1530°C the waste from lamination defects was as high as three times that at temperature of 1500-1510°C. With teeming time less than 15 minutes, the waste was again about three times as high as compared with teeming time of over 15 minutes. During the period of January to May 1958, after careful controls in steel refining and ingot casting, waste due to lamination defects in rimming steel had been reduced to less than 0.60%.

Shchukin, V. F.
INVESTIGATION OF STRESSES ON UNITS OF THE CONTINUOUS CASTING INSTALLATIONS FOR STEEL. July 57 [6]p. BISI Trans. no. 536; NLL M.4155.
Order from OTS or SLA $1.10 62-24162

Trans. of Stal' (USSR) 1957 [v. 17] no. 4, p. 320-321.

DESCRIPTORS: *Steel, Casting, Stresses, Manufacturing methods.

The Novo Tula Continuous Casting Plant consists of a tundish, copper mould, secondary cooling zone, two roller sections, automatic gas cutting equipment and transportation machinery. The following factors were measured: (a) stresses resisting the withdrawal of the ingot from the mould; (b) pressure of withdrawal rollers on the slab; (c) the torque on the universal spindles; and (d) power of current, voltage and speed of rotation of electric motors.

Shevakin, Yu. F., Osada, Ya. E. and others.
IMPROVED GROOVE DESIGN IN THE COLD REDUCTION OF TUBES. Sep 57 [10]p. 5 refs. BISI Trans. no. 603; NLL M. 4145.
Order from OTS or SLA $1.10 62-24152

Trans. of Stal' (USSR) 1957, v. 17 [no. 5] p. 441-444.

DESCRIPTORS: *Rolling mills, *Steel tubing, Deformation, Mathematical analysis.

An optimum groove taper has been determined which can be represented by curves plotted either by the NTZ (VNITI) graphical-analytical method or by the first variant of the Moscow Steel Institute (MIS) method. The second variant of the MIS groove calculation method is recommended: this method makes possible the use of an optimum groove taper and mandrels of small taper. Grooves designed on the basis of diminishing relative reduction allow an even distribution of roll force and avoid causing any significant increase in pressure at the beginning of the groove. (Author)

Shuralev, M. V. and Nekrasov, S. G.
CALCULATION OF ROLLING SPREAD. Oct 58 [9]p. 6 refs. BISI Trans. no. 928; NLL M. 4097.
Order from OTS or SLA $1.10 62-24106

Trans. of Stal' (USSR) 1958 [v. 18] no. 1, p. 57-60.

DESCRIPTORS: *Rolling mills, *Steel, Temperature, Deformation, Friction, Mathematical analysis.

A comparatively simple empirical formula determines with sufficient accuracy the spread in rolling with grooves, by introducing experimentally obtained correction factors, which depend on the conditions of rolling:

$$\Delta b = mf \ln \frac{H}{h_1} \sqrt{R(H-h_1)},$$

where m is the coefficient depending on the shape of the groove (0.6 in rolling oval strip in a square groove, 0.85 in rolling square strip in an oval groove, 1.00 in rolling square or rectangular strip on a flat roll), f is the friction coefficient, determined by Ekelund's formula with correction for the material of the roll and for speed; R is the calculation of the rolling radius of the roll $R = \frac{D_1 - h_1}{2}$; H is the calculated initial height of the strip; and h_1 is the calculated final height of the strip.

Siepmann, H., Pacyna, H., and Hauptvogel, H. W.
THE PROPORTION OF STEEL SCRAP IN THE CHARGE WHEN MELTING CAST IRON IN A CUPOLA FURNACE. [1962].
Order from BISI £3 15s BISI-2416

Trans. of Giesserei (West Germany) 1960, v. 47, 3 Nov, p. 608-614.

DESCRIPTORS: *Cupola furnaces, *Cast iron, Melting, *Steel, Manufacturing methods.

Steneroth, E.
DUCTILITY AND BRITTLE FRACTURE. Apr 62, 4700 words.
Order from HB $12.85 HB-5469

Trans. of Teknisk Tidskrift (Sweden) 1960, v. 90, no. 10, p. 221-226.

DESCRIPTORS: *Ship plates, Rupture, Fracture (Mechanics).

Sulez, F.
HEAT CONSUMPTION IN OPEN HEARTH STEEL PRODUCTION. May 62.
Order from BISI £5 10s BISI-2632

Trans. of Kohaszati Lapok (Hungary) 1960, v. [15](93) May, p. 200-205 and June, p. 274-278.

DESCRIPTORS: *Steel, Production, *Open hearth furnaces, Heat, Consumption.

Trubin, V. N. and Chernikhova, I. Ya.
EFFECT OF HEAT-TREATMENT CONDITIONS ON THE ANISOTROPY OF THE MECHANICAL PROPERTIES OF FORGED STEEL.
Order from BISI £5 BISI-2673

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1961 [v. 3] no. 5, p. 5-9.

DESCRIPTORS: *Steel, Forging, Mechanical properties, Heat treatment.

Tselikov, A. I. and Sonin, A. L.
THE COILING AND UNCOILING OF HOT ROLLED STRIP OF UP TO 12 mm. THICKNESS. Sep 57 [7]p. 3 refs. BISI Trans. no. 631; NLL M. 4134.
Order from OTS or SLA $1.10 62-24141

Trans. of Stal' (USSR) 1957, v. 17, no. 4, p. 374ff.

DESCRIPTORS: *Steel, *Sheets, Thickness, Processing, Rolling mills.

The possibility of coiling hot-rolled, low-carbon steel strip of thickness up to 12mm. with subsequent uncoiling in the cold state was demonstrated. The strip after this treatment has a smooth surface without transverse

cracks, and is of good quality. Mechanical and metallographic trials show that it satisfies the requirements of sheet for stamping class PG (deep drawing; P group surface quality). When thin strip of thickness 2 to 4mm is being uncoiled the yield point is sometimes passed and plastic flow causes a transverse wave form to appear; this may be remedied by applying tension in the uncoiling operation or by causing a reduction of 1.5 - 3% in cross-sectional area. (Author)

Tumarev, A. S. and Panyushin, L. A.
REDUCTION OF IRON OXIDES IN A LAYER AT HIGH-GAS-PHASE PRESSURE. Dec 58 [17]p. 3 refs. BISI Trans. no. 1113; NLL M. 4313.
Order from OTS or SLA $1.60 62-24196

Trans. of Stal' (USSR) 1958 [v. 18] no. 9, p. 769-776.

DESCRIPTORS: *Iron compounds, *Oxides, Reduction, Pressure, Carbon compounds, Monoxides, Gas flow, Decomposition.

In the kinetic range of the process an increase in pressure accelerates the reduction of iron oxides. The influence of pressure on the rate of the heterogeneous reduction process is the greater the rate of gas flow, i.e. the further into the kinetic range the process has been shifted. The influence of pressure on the rate of reduction for magnestic iron oxide is more significant than for ferric oxide. In general the harder the oxide is to reduce the greater is the influence of pressure. The influence of pressure increases with increasing degree of reduction of the oxide. On increasing the pressure in the blast furnace, the rate of iron oxide reduction in the low and medium temperature ranges must increase, i.e. the rate and degree of indirect reduction. The decomposition of carbon monoxide is accelerated by increasing pressure. With increasing flow this effect of pressure decreases.

Veselkov, N. G.
A SOVIET DELEGATE'S ACCOUNT OF STEEL-MAKING IN ENGLAND, tr. by S. Klemantaski. Sep 57 [11]p. BISI Trans. no. 655; NLL M. 4130.
Order from OTS or SLA $1.60 62-24137

Trans. of #Metallurg (USSR) 1957 [v. 2] no. 4, p. 44-47.

DESCRIPTORS: *Steel, Production, *Open hearth furnaces, *Electric furnaces, Great Britain.

See also 62-24138

Vyaznikov, N. F., Ermakov, S. S., and Soldatova, N. N.
CARBURIZING OF CHROMIUM STAINLESS STEEL. Apr 62.
Order from HB $2.00 HB-5324

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 3, p. 11-13.

DESCRIPTORS: *Stainless steel, *Chromium alloys, Carbon, Hardening, Temperature.

Wiegand, H. and Nieth, F.
EFFECT OF PRE-STRESSING (RESIDUAL STRESSES) UPON THE BEHAVIOR OF RIMMED BASIC CONVERTER STEEL SUBJECTED TO HOT DIPPING. [1962] [10]p. 6 refs.
Order from SLA $1.10 62-14543

Trans. of Metalloberfläche (West Germany) 1959, v. 13, no. 11, p. 346-350.

DESCRIPTORS: *Steel, Fracture (Mechanics), Thermal stresses, Grains (Metallurgy), Iron alloys, Zinc alloys, Deposits.

The behaviour of notched and unnotched test pieces of a rimmed basic converter steel is examined during galvanising in the presence of static tensile stresses. The stresses required to produce fracture under normal galvanising conditions were determined as well as the elongation behaviour and the embrittling effect of iron-zinc alloy deposits. Whilst the strength of unnotched test pieces is hardly affected by liquid zinc, elongation at fracture falls quite markedly. Notched test pieces tested under similar conditions show, however, both a fall in strength and a more marked reduction in elongation at fracture. (Author)

Zborovskii, A. A., Strolkov, L. K. and others.
HYDRODYNAMICS OF (PROOF OF CONVECTION IN) LIQUID STEEL IN INGOT MOULDS. Dec 57 [10]p. 6 refs. BISI Trans. no. 787; NLL M. 4161.
Order from OTS or SLA $1.10 62-24168

Trans. of Stal' (USSR) 1957, v. 17 [no. 1] p. 24-30.

DESCRIPTORS: *Steel, Liquid metals, Convection, Hydrodynamics, Castings, Molding.

The object of our investigation was to elucidate the duration and character of natural convection of liquid steel in a mould in which 7 ton ingots of killed and rimming steels have been cast under production conditions. (Author)

Zubov, V. Ya.
THE KINETICS OF STRESS RELAXATION IN QUENCHED STEEL (Kinetika Relaksatsu Napryazhdenii v Zakalennoi Stali). 19 Dec 61, 5p. 5 refs. I-0395; JPRS (R-2000-D).
Order from OTS $0.50 62-11168

Trans. of Nauchnye Doklady Vysshei Shkoly. Metallurgiya (USSR) 1958, no. 2, p. 245-248.

DESCRIPTORS: *Steel, Plasticity, Deformation, Stresses, Transformations, Heating, Temperature, *Martensite.

The kinetics of stress relaxation in quenched steel at elevated temperatures is analogous to the kinetics of martensite breakdown at the same such temperatures during tempering. The acting forces in relaxation during heating of a quenched steel are the transformations which occur in the martensite. The difference between the kinetics of relaxation in a quenched steel and in steel after tempering is tied in with the different acting mechanisms of plasticity (diffusion and shear). (Author)

Light Metals

Domony, A. and Lichtenberger-Bajza, E.
AN INVESTIGATION OF THE MECHANISM OF FORMATION AND CHARACTERISTICS OF THE PROTEC TIVE LAYERS FORMED ON ALUMINUM SURFACES BY VARIOUS EXTERNAL ENERGY RELATIONSHIPS. [1962] 17p. 12 refs.
Order from SLA $1.60 62-14797

Trans. of Metalloberfläche (West Germany) 1961, v. 15, no. 5, p. 134-138.
Another trans. is available from SLA $1.60 as 61-20746 [1961] [16]p.

DESCRIPTORS: *Oxides, *Coatings, *Surfaces, Anodes (Electrolytic cell), Electrolytic polishing, *Aluminum.

For abstract see Technical Translations 7: 552, 1962.

Smirnov, A. V. and Nachinkov, A. D.
SURFACE STRENGTHENING OF TITANIUM BY IMPREGNATION. Apr 62.
Order from HB $4.75 HB-5327

Trans. of #Metallov[edenie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1960, no. 3, p. 22-29.

DESCRIPTORS: *Titanium, *Titanium alloys, Surface properties, Friction, Phase studies, Impregnation.

Nonferrous (except light) Metals

Hagmann, D.
APPLICATION OF THE TWO-BAND MODEL TO THE ELECTRIC PROPERTIES OF PALLADIUM. Pt. 17 of Conductivity and Hall Constant. [1962] 15p.
Order from ATS $21.85 ATS-54P59G

Trans. of Z[eitschrift für] Metallk[unde] (West Germany) 1961, v. 52, no. 11, p. 727-735.

DESCRIPTORS: *Palladium, Electrical properties, Conductivity.

Kogan, B. I.
RARE EARTH ELEMENTS. 1 May 62 [15]p.
JPRS: 13623.
Order from OTS or SLA $1.60 62-24397

Trans. of Priroda (USSR) 1961 [v. 50] no. 12, p. 26-34.

DESCRIPTORS: *Rare earth elements, Rare earths, *Minerals, Chemical elements, Metallurgy.

Koster, W. and Hagmann, D.
SOLID SOLUTIONS OF PALLADIUM AND NEIGHBORING ELEMENTS IN THE PERIODIC SYSTEM. Pt. 16 of Conductivity and Hall Constant. [1962] 11p.
Order from ATS $21.80 ATS-53P59G

Trans. of Z[eitschrift für] Metallk[unde] (West Germany) 1961, v. 52, no. 11, p. 721-727.

DESCRIPTORS: *Palladium, Solids, Solutions, Chemical elements, Conductivity.

Leo, R. and Tauscher, L.
A RAPID COMPLEXOMETRIC METHOD FOR THE DETERMINATION OF ZINC IN COPPER ALLOYS. [1962].
Order from BISI £ 2 5s BISI-2506

Trans. of Hochschule für Schwermaschinenbau, Magdeburg. Wissenschaftliche Z[eitschrift] (East Germany) 1958 [v. 2] Oct, p. 219-223.

DESCRIPTORS: *Copper alloys, *Zinc, Determination, Metallurgical analysis, Test methods.

Mil'ner, A. S. and Feodos'eva, K. V.
MAGNETIC METHOD OF DETECTING DIFFUSION IN METALS. Jan 58 [6]p. 3 refs. BISI Trans. no. 764; NLL M. 4166.
Order from OTS or SLA $1.10 62-13198

Trans. of Fizika Metallov i Metallovedenie (USSR) 1956, v. 3, no. 3, p. 483-485.

DESCRIPTORS: *Metals, Diffusion, Detection, *Magnetic moments, Nickel alloys, Copper alloys.

Ptak, W.
ACTIVITY COEFFICIENTS OF SOME NON-FERROUS METALS IN BINARY SOLID AND LIQUID SOLUTIONS [AND] ACTIVITY COEFFICIENTS OF METALS IN TERNARY SOLUTIONS (Wspolczynniki Aktywnosci Niektorych Metali Niezelaznych w Dwuskladnikowych Roztworach Stalych i Cieklych [and] Wspolczynniki Aktywnosci Metali w Roztworach Trojskladnikowych) tr. by Teresa Truszkowska. 1962, 60p. 40 refs. PL-480 Int.
Order from OTS $0.50 60-21561

Trans. of Archiwum Gornictwa i Hutnictwa (Poland) 1954, v. 2, no. 1, p. 71-122 and 1955, v. 3, no. 1, p. 69-87.

DESCRIPTORS: *Metals, *Activity coefficient, Solids, Liquids, Solutions.
Formulas for the activity coefficients of the binary solutions were derived from the equations of A. Krupkowski and the equilibria. The relations are written in a form to give values for a certain temperature range: 1200° to 1700°K for Ni-C, 400° to 900°K for Sn-Bi, 1000° to 1500°K for Cu-Ag, 1350° to 1800°K for Cu-Ni, 300° to 700°K for Bi-Hg, 500° to 900°K for Sn-Zn, 550° to 1400°K for Bi-Cu, 500° to 1200°K for Cd-Zn, 400° to 900°K for Bi-Cd and Bi-Sn, and 1350°

for Ag-Cu and Cu-Ni. On the basis of the relationship between the activity coefficients and the composition in binary liquid solutions the formulas for ternary liquid solutions Pb-Cd-Zn, Sn-Pb-Zn, Sn-Cd-Zn, and Bi-Sn-Cd were calculated on the assumption that the solutions are regular. Hildebrand's rule was used to show the effect of temperature on the properties of the activity coefficients. The total heats of formation were calculated in respect to different compositions. The maximum values were: for the Pb-Cd-Zn and the Sn-Pb-Zn systems about 1100 cal/mol of solution, for the Sn-Cd-Zn system about 500 cal/mol and for the Bi-Sn-Cd system about 350 cal/mol.

Structural Metallurgy and Corrosion

CORROSION INHIBITION OF METALS IN ACID MEDIA. [1962] [13]p. (4 tables omitted).
Order from OTS or SLA $1.60 62-10994

Trans. of published Japanese patent [36]-20805, pat. specification 12A82 10065 (1961) by Japan Monopoly Co., appl. 27 June 59, pub. 10 July 61.

DESCRIPTORS: *Metals, *Corrosion inhibition, Acids, Corrosion, Melamine, Methyl radicals, Hydroxides, Urea, Thiourea derivatives.

The present invention will inhibit and further prevent the corrosion of various metals in acid medium by adding to the acid medium methylol melamines or the condensation product of methylol melamines with urea or with thiourea derivatives, either alone or in admixture with thiourea derivatives.

Antropova, N. G., Kalinina, Z. M., and Petrov, A. K.
INFLUENCE OF DEOXIDATION WITH ALUMINUM ON THE QUALITY OF STRUCTURAL STEEL.
Mar 58 [14]p. 9 refs. BISI Trans. no. 743; NLL M. 4169.
Order from OTS or SLA $1.60 62-13191

Trans. of Stal' (USSR) 1957 [v. 17] no. 1, p. 64-69.

DESCRIPTORS: *Steel, Microstructure, Aluminum alloys, Deoxidation, Quality control.

In metal which has previously been well deoxidised, only a part of the aluminium introduced combines with the oxygen left in solution. The excess quantity of aluminium, dissolved in the liquid metal, does not form chemical compounds with nitrogen. In the process of crystallisation and subsequent cooling of the steel the aluminium segregates and is adsorbed onto the surface of the cast crystals. Nitrogen, having a large speed of diffusion, encounters on its way aluminium in concentrations much greater than in the body of the grain, and reacts with aluminium as follows: $2Al + N_2 = 2AlN - 147600 + 50T$, the aluminium nitride formed as the finest inclusions forming a film round the primary grain. The stability of aluminium nitrides at high temperatures prevents the disruption of the film on heating the metal before rolling or forging. Such films remaining in the deformed metal, are points of weakness and apparently lead to the formation of lamellar fracture in steels alloyed with aluminium and chips in other structural steels.

Detert, K.
INVESTIGATIONS ON A NEW KIND OF SECONDARY RECRYSTALLISATION IN Fe-3%Si ALLOYS. [1960] [18]p. 30 refs.
Order from SLA $1.60 62-14167

Trans. of Acta Metallurgica (U. S.) 1959, v. 7 [no. 9] p. 589-598.
Another trans. is available from BISI £5 5s as BISI-1543, 1960.

DESCRIPTORS: *Iron alloys, *Silicon alloys, Crystallization, Grains (Metallurgy).

Investigations show that the secondary cubic recrystallisation represents an instance of a so far unobserved type of secondary recrystallisation.

Klemm, H.
SEGREGATION AND HEAT-RESISTING BEHAVIOR. [1962] [18]p. 7 refs.
Order from SLA $1.60 62-14329

Trans. of Metall (West Germany) 1959, v. 13 [no. 8] p. 752-759.

DESCRIPTORS: Metals, Impurities, *Heat resistant alloys, Creep, Grains (Metallurgy), Fracture (Mechanics).

The conditions of an ideal segregation and its function (slip inhibition) for heat - resisting behaviour are outlined. The influence of degree of disorientation on segregation is discussed in relation to strength properties at elevated temperatures. Cause and commencement of fracture are observed on decarburisation wedges originating preferentially at large-angle grain boundaries and the track of the main fracture surface is related to these grain boundaries. Findings in this connection with the grain boundary influence at elevated temperatures give weight to the general assumption that a coarser structure is associated with better creep properties, because in this way the total length of the grain boundaries, especially of the large-angle grain boundaries, has been reduced. (Author)

Ruttmann, W. and Schinn, R.
SUMMARY OF RESULTS OF THE JOINT LONG-TIME CREEP INVESTIGATIONS: CONCLUSIONS FOR STEAM PLANT CONSTRUCTION. [1962] [17]p. 20 refs.
Order from SLA $1.60 62-14680

Trans. of Vereinigung der Grosskesselbesitzer. Mitteilungen (West Germany) 1958, no. 57, p. 411-420.
Another trans. is available from BISI £4 15s as BISI-1515 [1960].

DESCRIPTORS: *Metals, Creep, *Steam power plants, Materials.

The joint creep tests undertaken by the Verein Deutscher Eisenhüttenleute (German Iron and Steel Institute), the Wasserrohrkessel-Verein (German Water tube boiler Association), the Fachgemeinschaft Kraftmaschinen (Power Engine Association) and the

Vereinigung der Grosskesselbesitzer (Association of the proprietors of large boiler plant) had initially been planned for temperatures between 600 and 650°C. This range was however soon extended to 500 to 700°C and at a later date 450 to 750°C. A total of 1136 test pieces were tested in 4 creep laboratories. Supplementary metallurgical tests and fatigue tests at temperatures between 500 to 650°C on ferritic and austenitic steels are still in progress at the Max Planck Institute für Eisenforschung Düsseldorf. The total investigation covers 65 different materials from 194 different casts or heat treatments respectively: 41 are ferritic steels, 17 austenitic and 7 special low iron alloys. Apart from conventional cylindrical test pieces also notched and welded testpieces were included. (Author)

Shapranov, I. A., Shablinskii, V. B., and Petrova, E. V.
AN AUTOMATIC INSTALLATION FOR THE INTRODUCTION OF MAGNESIUM INTO MOLTEN IRON (Avtomatizirovannaya Ustanovka dlya Vvedeniya Magniya v Zhidkii Chugun). July 61 [9]p. (foreign text included). NLL M. 3515.
Order from OTS or SLA $1.10 62-23874

Trans. of Liteinoe Proizvodstvo (USSR) 1961, no. 6, p. 22-24.

DESCRIPTORS: *Sterilizers, Automatic, *Iron, Melting, *Magnesium, Mechanical properties, Microstructure, Castings, Impurities.

An automatic autoclave installation, AMCh-1.5, for the introduction of pure magnesium into molten iron has been developed and is now employed industrially. The installation is intended for magnesium treatment in ladles of 0.5-1.5-ton capacity, with an initial pressure of up to 6 kg/cm.^{2} The AMCh-1.5 installation consists of an autoclave lid base, raising mechanism, bayonet mechanism, magnesium-feeding mechanism, teapot spout ladle, ladle support, lid-raising hydraulic cylinder and bayonet ring.

Wetzlar, K. and Lennartz, G.
OCCURRENCE OF TITANIUM SULFIDE Ti_2S IN TITANIUM-STABILIZED AUSTENITIC CHROME-NICKEL STEELS. Apr 62, 700 words.
Order from HB $2.80 HB-5595

Trans. of DEW Technische Berichte [sic] 1961, v. 1, no. 1, p. 15-16.

DESCRIPTORS: *Steel, Nickel alloys, Chromium alloys, *Titanium compounds, *Sulfides, Impurities, Microstructure.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

LENIN ICEBREAKER: [SELECTED] ARTICLES. 29 Jan 62, 78p. JPRS: 12183.
Order from OTS $2.00 62-11111

Trans. of Sudostroenie (USSR) 1961 [v. 27] no. 8, p. 11-14 and 21-38.

DESCRIPTORS: *Icebreakers, *Atmosphere, *Contamination, Radioactive waste, Radioactive isotopes, *Nuclear power plants, Radioactivity, Gases, *Steam power plants, Power reactors, *Electric power production, Auxiliary power plants, Electric motors, Power supplies, Control systems, Air conditioning equipment, Design.

Contents:
Providing for radiation safety on the "Lenin" atomic icebreaker, by A. I. Bunnazyan and others
The power of the "Lenin" atomic icebreaker, by A. I. Brandaus and B. S. Yudovin
The electric power system of the "Lenin" icebreaker, by N. A. Agafonov
Developments in the facilities of the atom-powered icebreaker "Lenin", by P. P. Berezin.

Basov, N. G., Oraevskii, A. N., and Svidzinskii, K. K.
THEORY OF THE HYPERFINE STRUCTURE OF THE ROTARY SPECTRA OF MOLECULES SPECIFIED BY AN ELECTRIC 2^4-POLE NUCLEAR MOMENT. [1961] 8p. 9 refs. MDF B-128.
Order from OTS $0.50 62-11615

Trans. of Optika i Spektroskopiya (USSR) 1956, v. 1, no. 3, p. 285-289.

DESCRIPTORS: *Molecules, *Molecular spectroscopy, Radiofrequency, *Hyperfine structure, Theory, *Nuclear moments, Electric fields, Magnetic moments, Moments.

A theory is developed of the hyperfine structure of the rotary spectra of linear molecules and of molecules of the symmetric gyroscope type specified by the electric 2^4-pole nuclear moment. The operator of the 2^4-pole electric nuclear moment and the operator of the interaction energy of the 2^4-pole nuclear moment with the electric field of molecules of the kind cited are given; the diagonal matrices are calculated of the elements of the interaction energy operator of a 2^4-pole nucleus with the field of molecules for the linear molecule case as well as for the case of molecules of the symmetric gyroscope type. (Author)

Czyzewski, Oleg and Holynski, Roman.
MULTIPLE GENERATION OF PARTICLES IN NUCLEON-NUCLEON AND π-MESON-NUCLEON COLLISIONS IN THE REGION OF ACCELERATOR ENERGIES. 24 Oct 61 [28]p. JPRS: 10727.
Order from OTS or SLA $2.60 62-19513

Trans. of Postepy Fizyki (Poland) 1961, v. 12, no. 1, p. 71-87.

DESCRIPTORS: Particles, *Nucleons, *Mesons, Nuclear energy, Protons, Nuclear reactions, Ionization, Accelerators, Velocity, Neutrons, Production, Nuclear structure, Nuclear physics.

The following characteristics are common for the interactions π-nucleon and nucleon-nucleon in the region of energy of 5-10 BeV: nucleons, independently of the number of mesons produced, preserve their direction of flight, while the velocities of nucleons and mesons are the greater as less mesons are produced. Mesons are produced more isotropically in the system of the center of mass, and the anisotropy decreases with the quantity of mesons. Statistics, which are free of doubt, are not too extensive. Angular distributions, as well as velocity distributions, are inexact, and the picture of the changes of these distributions with energy is incomplete. (Author)

Guerreschi, L. and Romita, R.
RESEARCHES ON THE CHROMIUM CONTENT OF BLACK ALUMINUM COATINGS: USE OF RADIOACTIVE CHROMIC ANHYDRIDE (Ricerche sul Tenore di Cromo dei "Neri di Alluminio". Impiego di Anidride Cromica Radioattiva). [1962] [20]p. (foreign text included) 33 refs.
Order from SLA $1.60 62-16091

Trans. of Alluminio (Italy) 1956, v. 25, p. 333-336.

DESCRIPTORS: *Aluminum coatings, Chromium, Chemical analysis, *Chromium compounds, *Anhydrides, *Radioactive isotopes, *Radioactivity, Determination, Electrochemistry.

Nesmeyanova, G. M. and Alkhazashvili, R. M.
INVESTIGATION OF THE ROLE OF OXIDATION-REDUCTION PROCESSES IN THE DISSOLUTION OF URANIUM OXIDES IN ACID MEDIA. [1961] [14]p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-4717

Trans. of mono. Issledovanie Roli Okislitel'no-Vosstanovitel'nykh Protsessov pri Rastvorenii Okislov Urana v Kislykh Sredakh, Moscow, 1960, p. 1-15.

DESCRIPTORS: *Uranium compounds, *Oxides, Acids, Oxidation-reduction reactions, Ores, Impurities, Solutions, Nitric acid, Sulfuric acid, *Iron compounds, Oxidation, Oxidizers.

Results are given of an investigation of the process of oxidation and dissolution of the uranic-uranous oxide in acid media and the effect of compounds of divalent iron on this process. We first give a comparison of the oxidizing ability of various oxidizers relative to uranium. It is shown that the oxidation of tetravalent uranium is not determined by the normal oxidation-reduction potential uniquely. The results obtained indicate that the causes of the incomplete extraction of uranium with a mixture of nitric and sulfuric acids at low concentrations, in cases when the solutions contain large numbers of iron ions, are connected with the processes of complex formation between the ions Fe^{2+}, SO_4^{2-}, and NO_3^-. (Author)

Instruments and Installations

Baranov, P. S. and Slovokhotov, L. I. and others.
DIFFERENTIAL METHOD OF DETERMINING EFFECTIVENESS OF A GAMMA-COUNTER.
23 Mar 62 [10]p. 2 refs. FTD-TT-62-146.
Order from OTS or SLA $1.10 62-24274

Unedited rough draft trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1961, no. 3, p. 63-66.

DESCRIPTORS: *Gamma counters, Effectiveness, Photons, Energy, Protons, Mesons, Coincidence counting, Numerical methods and procedures, Radiation counters.

A method is described for determining the effectiveness of a gamma-counter to photons with an energy of tens and hundreds of Mev, based on the registration of coincidences between the proton and gamma-quantum, originating during photoproduction of neutral mesons on hydrogen. The effectiveness of gamma-counter to photons with energy ranging from 30 to 160 Mev with resolving power according to the energy of photons of about 20% was determined. In principle, this method allows us to determine the energy dependence of the effectiveness of gamma-quanta registration with good resolution (up to ± 5 Mev). (Author)

Tsitovich, A. P.
A 256-CHANNEL ANALYZER WITH TWO-BEAM CATHODE RAY TUBE AND MAGNETIC DRUM MEMORY DEVICES. [1961] [30]p. 7 refs.
Order from OTS or SLA $2.60 AEC-tr-4700

Trans. of mono. 256-Kanal'nyi Vremennoi Analizator s Ustroistvom Pamyati na Dvukhluchevykh Trubkakh i Magnitom Barabane, Moscow, 1960 [p. 1-31].

DESCRIPTORS: *Neutron spectrometers, *Timing circuits, *Pulse analyzers, *Cathode ray tubes, *Memory devices, Design.

Nuclear Engineering and Power

SOVIET RESEARCH IN CYCLIC ACCELERATORS: THE THEORY OF ACCELERATORS (PHOTONUCLEAR REACTION) (Teoriya Uskoritelei Fotoyadernye Reakstii). 15 May 62 [287]p. 150 refs.
JPRS: 13752.
Order from OTS or SLA $18.00 62-24725

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. Trudy, 1960, v. 13, p. 3-173.

DESCRIPTORS: *Accelerators, Theory, Photonuclear reactions, *Particles, Motion, *Particle accelerators, Cyclotrons, Nuclear physics, Bevatrons, Synchrotrons, Electrons, Motion.

Contents:
Research in theory of movement of particles in modern accelerators, by A. A. Kolomenskii
Theoretical analysis of methods used for increasing the effectiveness of cyclic accelerators, by E. M. Moroz.

STUDY OF CRITICAL PARAMETERS FOR REACTOR SYSTEMS: COLLECTION OF ARTICLES. 21 Feb 62 [186]p. 54 refs. FTD-TT-61-124; AD-273 412.
Order from OTS or SLA $13.00 62-23684

Unedited rough draft trans. of mono. Issledovaniya Kriticheskikh Parametrov Reaktornykh System: Sbornik Statei, Moscow, 1960, p. 3-117.

DESCRIPTORS: *Power reactors, *Spheres, Particles, Velocity, Diffusion, Scattering, Reflection, Heterogeneous reactors, *Boiling water reactors, *Nuclear power plants, *Kinetic theory, Graphite, Beryllium, Plutonium compounds, Statistical distributions, Statistical functions, Polynomials, Functions, Integral equations, Numerical methods and procedures, Tables.

Contents:
Exact solutions of single velocity kinetic equation and their application in calculating diffusion problems (improved diffusion method) by Yu. A. Romanov
Approximate method of calculating critical masses of spherical reactors with infinite reflectors, by G. I. Marchuk and V. P. Kochergin
Use of even approximations in spherical harmonic method, by G. Ya. Rumyantsev
Critical masses of uranium graphite reactors, by G. I. Marchuk and others
Critical masses of uranium-beryllium reactors, by G. I. Marchuk and others
Critical masses of water mixtures of uranium and plutonium compounds, by G. I. Marchuk and others
Interaction of systems of fissile matter in a scattering medium, by V. G. Zagrafov
Experimental study of interaction between two subscritical reactors, by A. V. Kamaev and others
Calculation of sectionalized nuclear power plants, by G. I. Marchuk and others.

Stoicovici, Eugen and Ciontea, Nicolae.
CONTRIBUTIONS TO THE PRODUCTION OF A PORCELAIN TOROID FOR A BETATRON. [1961] [7]p. JPRS: 8901.
Order from OTS or SLA $1.10 62-19468

Trans. of Industria Usoara (Rumania) 1961, v. 8, no. 1, p. 7-9.

DESCRIPTORS: *Electron accelerators, *Betatrons, Nuclear physics, Targets, Electron beams, Vacuum apparatus, Materials.

PHYSICS

Aden, H.
EVALUATION OF r_{ik}-INTEGRALS USED DURING CALCULATIONS OF THE GROUND STATE OF LITHIUM. 21 Dec 61 [6]p. JPRS: 11630.
Order from OTS or SLA $1.10 62-24537

Trans. of Annalen der Physik (East Germany) 1961 [ser. 7] v. 8, no. 1/2, p. 28-30.

DESCRIPTORS: *Integrals, Integration, Special functions, Series, *Lithium, *Atoms, Electrons

The variational method when applied to three-electron systems leads in case of the r_{ik} terms (r_{ik} = electron distances) to certain types of integrals which are difficult to handle. The present paper results from an attempt to find a way to develop such integrals in a form suitable for analysis and then to integrate them. (Author)

Ardenne, Manfred von.
TABLES OF ELECTRON PHYSICS, ION PHYSICS, AND ELECTRON MICROSCOPY. VOL. II: BOUNDARY FIELDS AND AUXILIARY FIELDS, PT. 1. Aug 60 [365]p. F-TS-9991.
Order from OTS or SLA $21.00 61-19741-1

Partial trans. of mono. Tabellen der Elektronenphysik, Ionenphysik und Übermikroskopie, v. 2, Berlin, 1956.

DESCRIPTORS: Tables, *Electrons, *Ions, *Physics, *Electron microscopy, Gases, Vapors, Kinetic theory, Vacuum systems, Vacuum pumps, Plasma physics, Thermodynamics, Mechanics, Hydrodynamics, Thermal radiation, Temperature, Thermal conductivity, Materials.

Contents:
Kinetic gas theory and high-vacuum technique
Plasma physics
Mechanics and thermodynamics.

Ardenne, Manfred von.
TABLES OF ELECTRON PHYSICS, ION PHYSICS, AND ELECTRON MICROSCOPY. VOL. II: [BOUNDARY FIELDS AND AUXILIARY FIELDS] PT. 2. [Apr 60] [386]p. F-TS-9991.
Order from OTS or SLA $21.00 61-19741-2

Partial trans. of mono. [Tabellen der Elektronenphysik, Ionenphysik und Übermikroskopie] v. 2 [Berlin, 1956].

DESCRIPTORS: Tables, *Electrons, *Ions, *Physics, *Electron microscopy, Optics, Optical instruments, Photography, Electrical engineering, Engineering, Magnetism, High frequency, Electric currents, Sources, Stabilization, Nuclear physics, Radiation counters, Nuclear weapons, Reactor theory, Radioactive isotopes, Isotopes.

Contents:
Optics and photography
Electrical engineering and magnetism
High-frequency technique and technique of stabilized current sources
Nuclear physics
Tables of important constants and factors.

Ardenne, Manfred von.
TABLES OF ELECTRON PHYSICS, ION PHYSICS, AND ELECTRON MICROSCOPY. VOL. II: [BOUNDARY FIELDS AND AUXILIARY FIELDS] PT. 3. [Apr 60] [224]p. 2949 refs. F-TS-9991.
Order from OTS or SLA $15.00 61-19741-3

Partial trans. of mono. [Tabellen der Elektronenphysik, Ionenphysik und Übermikroskopie] v. 2 [Berlin, 1956].

DESCRIPTORS: Tables, *Electrons, *Ions, *Physics, *Electron microscopy, Mathematics, Functions, Errors, Probability, Numerical analysis.

Contents:
Mathematics
Index
Bibliography.

Berezin, A. K., Fainberg, Ya. B. and others.
THE INTERACTION OF INTENSE ELECTRON BEAMS WITH PLASMA. 21 Mar 62 [13]p. 13 refs. FTD-TT-62-314; SC-1068; ASTAR 2678.
Order from OTS or SLA $1.60 62-24285

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1961, v. 11, no. 6, p. 493-497.

DESCRIPTORS: *Electron beams, *Plasma physics, Energy, Electrons, Density, Particles, Excitation, Electron guns, Vacuum apparatus, Pressure, Gas ionization, Electric discharges.

The energy losses are experimentally determined of an initially unmodulated electron beam on passing through plasma not in a magnetic field. With a current of 8 amps, and energy of 26 Kev, and a plasma density of (7 to 9) $\times 10^{10}$ cm^{-3} these losses reach 12% of the energy of the electron beam. Such high losses are due to coherent interaction of the beam with plasma. (Author)

Brovchenko, V. G., Gokhberg, B. M., and Morozov, V. M.
STABILIZATION OF THE ENERGIES OF IONS ACCELERATED BY A HIGH VOLTAGE ELECTROSTATIC GENERATOR [Stabilizatsiya Energii Ionov, Uskoryaemykh Vysokovol'tnym Elektrostaticheskim Generatorom]. [1961] 4p. 1 ref. MDF B-119.
Order from OTS $0.50 62-11238

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 6, p. 1023-1025.
Another trans. is available from ATS as RJ-331.

DESCRIPTORS: *Ions, Energy, Ion accelerators, *Ion beams, Voltage, *Electrostatic generators, Generators, Stabilization

A system was constructed in which the variation in the ion beam trajectory in a constant magnetic field serves as the signal of the deviation of the voltage, developed by the generator, and the voltage is reduced by an appropriate variation of the current delivered by the electron gun to the high-voltage electrode. This system possesses low wear time and is practically inertialess.

Chernov, L. A.
FLOW AND DENSITY OF ACOUSTICAL ENERGY IN A MOVING MEDIUM, tr. by B. W. Kuvshinoff. 24 Apr 62, 6p. 2 refs. APL/JHU TG 230-T291.
Order from OTS $0.50 62-11681

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1946, v. 16, no. 6, p. 733-736.

DESCRIPTORS: *Acoustics, *Sound, Propagation, Density, Velocity, Pressure, Geometry, Numerical analysis.

New formulas are derived for flow and density of acoustical energy in geometric approximation, depending only on the potential of acoustical velocity and not containing acoustical pressure.

Kulenkampff, H. and Zinn, W.
POLARIZATION OF THE X-RAY CONTINUOUS RADIATION FROM THIN TARGETS AT 35 AND 45 ke V. [1962] 15p.
Order from K-H $18.75 K-H 11396-e

Trans. of Zeit[schrift] für Physik (West Germany) 1961, v. 161, p. 428-438.

DESCRIPTORS: *X-rays, Targets, Polarization.

Makarikhin, S. I.
THE NATURE OF THE MOTION OF A GYROSCOPE IN THE PRESENCE OF DISPLACED CENTER OF GRAVITY AND FRICTION. 28 Feb 62 [18]p. 13 refs. FTD-TT-62-189; AD-273 883.
Order from OTS or SLA $1.60 62-24947

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Priborostroenie (USSR) 1961, v. 4, no. 6, p. 98-108.

DESCRIPTORS: *Gyroscopes, Equations of motion.

A study is made of the effect of displaced center of gravity in a gyroscopic system in the presence of friction and correction momenta upon the motion of a gyroscope with a horizontal external axis. The problem is solved using the concept of the "mapping point." The effects of displaced center of gravity, correction and fluid friction on the motion of a gyroscope with a constant correction characteristic when the cantilever is fixed and examined. (Author)

Pal, Lenard.
TEN YEARS OF THE CENTRAL PHYSICS-RESEARCH INSTITUTE. 13 Apr 62 [13]p. JPRS: 13450.
Order from OTS or SLA $1.60 62-24015

Trans. of Magyar Tudomany (Hungary) 1961, v. [6]68, no. 9, p. 529-536.

DESCRIPTORS: *Physics, Scientific organizations, *Scientific research, Research program administration, *Hungary.

Safronov, B. G., Goncharenko, V. P., and Goncharenko, D. K.
CONCERNING THE PROPAGATION OF A PLASMOID IN A MAGNETIC FIELD. [1961] [8]p. 2 refs.
Order from OTS or SLA $1.10 AEC-tr-4722

Trans. of mono. K Voprosu o Rasprostranenii Plazmennogo Sgustka v Magnitnom Pole, Khar'kov, 1960 [p. 201-208.

DESCRIPTORS: *Plasma physics, Propagation, Plasma oscillations, *Magnetic fields, Solenoids, Magnetic properties.

A qualitative determination was made of the behavior of plasmoids in a plane coinciding with the direction of the initial velocity and with the direction of the magnetic field. (Author)

Sinel'nikov, K. D., Rutkevich, B. N., and Safronov, B. G.
NONADIABATIC TRAPS FOR CHARGE PARTICLES, I. [1961] [17]p.
Order from OTS or SLA $1.60 AEC-tr-4724

Trans. of mono. Neadiabaticheskie Lovushki Zaryazhennykh Chastits, Khar'kov, 1960 [p. 479-494].

DESCRIPTORS: *Plasma physics, *Particles, *Magnetic fields, Mirrors, Particle beams, Diffusion.

It is shown that it is possible to construct a nonadiabatic trap, the "ideality" of which is wholly determined by the exact parallelness of the particles entering the trap. The nonadiabatic trap is analyzed, in which the deviations from ideality are wholly determined by deviations from monochromaticity of the velocities of the injected particles.

Sinitsa, N. G.
MEASUREMENT OF THE DENSITY OF A PLASMA WITH THE AID OF A RESONANT CIRCUIT. [1961] [28]p. 6 refs.
Order from OTS or SLA $2.60 AEC-tr-4731

Trans. of mono. Ob Izmerenii Plotnosti Plazmy s Pomoshch'yu Kolebatel'nogo Kontura, Khar'kov, 1960 [p. 461-475].

DESCRIPTORS: *Plasma physics, Density, Measurement, Electromagnetic fields, Coils, Inductance, Magnetic fields, *Tuned circuits, Circuits, Resonance, Electromagnetic waves, Propagation.

The problem on the propagation of an axially-symmetrical electromagnetic wave along a helix containing a plasma is solved in the linear hydrodynamic approximation. The problem is also considered of the shift of the resonant frequency and the change in resistance of the resonant circuit when the plasma is placed inside the inductance coil. The problem is considered for two cases: in the presence of a constant magnetic field and in its absence. In the former case, for the sake of simplicity, the losses in the plasma are neglected. (Author)

Teplyakov, D. I.
SOVIET RESEARCH ON SOLAR ENERGY UTILIZATION: INVESTIGATION OF THE RADIATION FIELD STRUCTURE IN SOLAR ENERGY UTILIZATION UNITS WITH REFLECTING CONCENTRATORS. 31 May 62, 12p. 7 refs. JPRS: 13929.
Order from OTS $0.50 62-11671

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1958, v. 1, no. 4, p. 31-39.

DESCRIPTORS: *Solar energy, Mirrors, Reflectors, Parabolic bodies, Thermal radiation, Energy, Infrared radiation, Solar spectrum.

This study presents the solution of the idealized problem of the radiation field structure when the solar radiation is concentrated by reflection from a mirror surface having a paraboloid or parabolic cylinder form. Some features of the real problem are examined. The results of an experimental investigation of the radiation field structure on light models of solar units are given. (Author)

Volkov, S. D.
STATISTICAL STRENGTH THEORY. Vol. 11 of Russian Monographs and Texts on Advanced Mathematics and Physics. 1962, 278p.
Order from GB $11.50

Trans. of mono. Statisticheskaya Teoriya Prochnosti, Moscow, 1960, 174p.
Another trans. is available from OTS or SLA $21.00 as 62-19646, MCL-999, 23 Jan 62 [363]p.

DESCRIPTORS: Textbooks, *Applied mechanics, *Structures, *Machines, Design, Theory, Stresses, Mathematical analysis, Mathematical prediction, Statistical analysis, Materials, Elasticity, Deformation, Microstructure, Mechanical properties.

Electricity and Magnetism

Belov, K. P. and Levitin, R. Z.
MAGNETOELASTIC PHENOMENA IN ANTIFERROMAGNETS. [1961] 5p. 9 refs. MDF B-183.
Order from OTS $0.50 62-11478

Trans. of mono. Ferrity [Ferrites] [Minsk] 1960, p. 78-82.

DESCRIPTORS: *Antiferromagnetism, *Elasticity, *Magnets.

Results are presented of measurements of the Young's modulus and the internal friction of the polycrystalline antiferromagnetic compounds NiO and Cr_2O_3. The anomaly in the Young's modulus at the Curie point ($\sim 35^\circ$ C) and also the peak of the internal friction near this temperature are clearly seen. The change in the Young's modulus in NiO is shown as a function of the magnetic field and as a function of temperature.

The diminution of the magnitude of the ΔE-effect as the Curie point is approached indicates that the anomalies in the modulus are due to the processes of redistribution of the magnetic moments of the antiferromagnetic domains. The influence of the degree of antiferromagnetic order of the spins on the elastic modulus and internal friction, near the Curie point, is explained qualitatively on the basis of the theory of phase transitions of the II kind taking relaxation into account.

Bulashevich, Yu. P.
CONCERNING THE QUESTION OF STUDYING ELECTRICAL ANOMALIES ON MODELS (K Voprosu ob Izuchenii Elektricheskikh Anomalii na Modelyakh). [1962] [11]p. (foreign text included) 1 ref.
Order from OTS or SLA $1.60 62-14596

Trans. of [Akademiya Nauk SSSR]. Izvestiya. [Seriya Geograficheskaya i Geofizicheskaya] 1943 [v. 7] no. 6, p. 354-358.

DESCRIPTORS: *Direct current, *Electric fields, Distortion, Model tests, Electrical conductance, Spheres, Electric potential.

The distortions of the electrical field of direct current caused by a continuous body are compared with these caused by a hollow one. By introducing effective conductivity there are given criteria for the equivalence of distortions. (Author)

Gothe, K. H.
EXPERIMENTAL DETERMINATION OF THE COMPONENTS OF PERMEABILITY TENSOR AND THE SPECTROSCOPIC SPLITTING FACTOR OF Mg - Mn FERRITES IN THE MICROWAVE AREA, I (Experimentelle Bestimmung der Komponenten des Permeabilitaetstensors unde des Spektroskopischen Aufspaltungsfaktors an Mg - Mn Ferriten im Mikeowllengebiet, I). 24 July 61 [20]p. 1 ref. JPRS: 9692.
Order from OTS or SLA $1.60 62-24540

Trans. of Annalen der Physik (East Germany) 1960, ser. 7, v. 6, no. 5/6, p. 298-306.

DESCRIPTORS: Magnesium, Manganese, *Ferrites, Permeability, Tensor analysis, Resonance, Resonance absorption, Microwave spectroscopy, Measurement, Frequency.

This is a report about the construction of instruments for the experimental determination of the tensor components at 3.2 cm wave length. In order to increase the accuracy of measurement, an intermediate frequency method is used and its operation is described. The measured results for Mg - Mn ferrites are given and discussed. Additional measurements of the g-factor at 1.25 cm wave length were performed. (Author)

Karakushan, E. I. and Stafeev, V. I.
LARGE AREA MAGNETODIODES. [1962] [14]p. 3 refs
Order from OTS or SLA $1.60 62-106[illegible]

Trans. of #Fiz[ika] Tverd[ogo] Tela (USSR) 1961, v. 3, no. 7, p. 2031-2040.

DESCRIPTORS: *Magnetos, *Diodes, Magnetic properties, Magnetic fields, Intensity, Thickness, Electrical properties.

The structure and properties of a large-area magnetodiode are described. It is shown that the magnetic response of magnetodiodes is considerably larger than that expected from theory. The reason for such a high magnetic response is the curvature of the line of flux in the magnetic field which leads to a diminution in the effective distance between the p-n junction and the ohmic contact. (Author)

Polivanov, K. M.
TO THE THEORY OF DETERMINING THE PERMEABILITY OF METAL FERROMAGNETICS AND MAGNETO-DIELECTRICS ACCORDING TO EXPERIMENTAL RESULTS. [1961] 29p. 23 refs. MDF P 126.
Order from OTS or SLA $2.60 62-19995

Trans. of Elektrichestvo (USSR) 1953, no. 3, p. 19-29.

DESCRIPTORS: Metals, *Ferromagnetic materials, Magnetic materials, *Dielectrics, Permeability, Determination, Theory, Semiconductors, Electric properties, Magnetic properties.

Methods are explained which permit both the electric (σ , ε) and the magnetic (μ) properties of magneto-dielectric and ferromagnetic semiconductors to be determined in terms of experimental results. (Author)

Schweizerhof, Sigfrid.
A NEW MULTILAYER MATERIAL WITH RECTILINEAR MAGNETIZATION CURVE. [1962] 47p. 24 refs.
Order from SLA $4.60 62-14786

Trans. of Zeitschrift fllr Metallkunde (West Germany) 1941, v. 33, no. 4, p. 175-185.

DESCRIPTORS: *Magnetic materials, Materials, Magnetic properties, Physical properties, Magnetostriction, Permeability, Heat treatment, Stresses, Elasticity, Sheets, Nickel alloys, Iron alloys, Plating, Magnetic cores, Alloys.

Selzer, Eduoard.
EARTH MAGNETISM: SIMULTANEOUS RECORDINGS MADE IN FRANCE, AT THE EQUATOR, AND IN THE ANTARCTIC, OF THE MAGNETIC EFFECT RESULTING FROM THE "ARGUS EXPERIMENT". [1962] 6p. 3 refs.
Order from SLA $1.10 62-16101

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1959 [v. 249] no. 13, p. 1133-1135 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Terrestrial magnetism, Magnetism, Measurement, France, Antarctic regions, *Nuclear explosions, Magnetic effects.

The Argus Experiment, which consisted of three nuclear explosions at an approximate altitude of 480 km (300 miles) above the South Atlantic, has generated magnetic signals in each of the three cases. These

signals have been recorded very accurately and with precise timing by the French stations of Chambon-la-Foret, Bangui, and the Antarctic. (Author)

Sokolov, A. V.
MAGNETO-OPTICAL PHENOMENA IN FERROMAGNETICS (MACROSCOPIC THEORY) (O Magnetooptticheskikh Yavleniyakh v Ferromagnetikakh (Makroskopicheskaya Teoriya) tr. by D. R. H. Phillips. 2 May 61 [74]p. (foreign text included) 28 refs. Trafford Park trans. no. 2966; NLL M. 3339.
Order from OTS or SLA $7.60 62-24655

Trans. of Uspekhi Fiz[icheskikh] Nauk (USSR) 1953, v. 50, no. 2, p. 161-196.

DESCRIPTORS: *Ferromagnetic materials, Materials, *Magneto-optic rotation, Optics, Rotation, Reflection, Propagation, Light, Polarization, Metals.

Contents: General information on the Faraday and Kerr effects in ferromagnetics; Relation between the amplitudes of the incident and reflected wave in the case of a magnetised ferromagnetic. Minimum- and zero-rotation of analyser and polariser and the law of mutual reversibility; Principles of macroscopic description of magneto-optical phenomena in ferromagnetics; Propagation of a plane non-homogeneous wave inside a ferromagnetic metal; Magnetic rotation and ellipticity in the passage of light through thin ferromagnetic layers; Polar Kerr effect in normal incidence of light; Polar Kerr effect in oblique incidence of light; General formulae for reflection with meridional magnetisation; The equatorial Kerr effect.

Electronics

DUOPLASMATRON ION SOURCE WITH AUXILIARY MAGNETIC FIELD. 6 Sep 61 [8]p. JPRS: 8832.
Order from OTS or SLA $1.10 62-19741

Trans. of unidentified mono. (information pamphlet) issued by VEB Vakutronik Dresden (East Germany) Feb 61.

DESCRIPTORS: Plasma physics, *Ion sources, Magnetic fields, Construction, *Gas ionization, Discharge tubes.

The Dueplasmatron Ion Source is mainly used for ionization of H_2, D_2, and electro-positive gases. It can produce large ion currents with electrostatic ray concentration in continuous as well as in impulse operation and is suitable, for example, for installation in accelerators with linear or tangential bombarding direct-ion. Its advantage lies in a very high efficiency of ionization at relatively low discharge current. (Extract)

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER EDUCATION, RADIOPHYSICS SERIES, 1961, VOL. 4, NO. 5. 4 May 62 [442]p. JPRS: 13656.
Order from OTS or SLA $22.25 62-24724

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1961, v. 4, no. 5, p. 795-985.

DESCRIPTORS: Radio, Physics, *Electromagnetic waves, Theory, Sun, *Ionosphere, *Plasma physics, Attenuation, Growth, Conductivity, Temperature, *Electron beams, Light, Nuclear magnetic resonance, Oscillation, *Waveguides, Sound, Scattering, Absorption, *Radio astronomy, Klystrons, *Electronics, Magnetohydrodynamics, Microwaves, Atmosphere, High frequency, Particles, Solar flares, Radio waves, Cosmic rays, Cerenkov radiation, Magnetic fields.

Contents:
Use of the surface impedance concept in the theory of surface electromagnetic waves, by M. A. Miller and V. I. Talanov
Connection between the sporadic radio emission from the sun and the state of the ionosphere, by G. M. Artem'eva and others
Instability of magnetoactive plasma against high-frequency electromagnetic disturbances, IV, by V. V. Zheleznyakov
On the question of attenuation and growth of plasma waves, by A. A. Andronov
Effect of electrostatic instabilities on electric conductivity and temperature of a plasma, by V. D. Shapiro
Interaction between electron beam and electromagnetic waves in an anisotropic dielectric, by P. V. Blokh and E. A. Kaner
Experimental investigation of the "flicker" of an artificial source of light, by V. M. Bovsheverov and others
On the theory of spontaneous decay of quantum systems, by F. V. Bunkin
Observation of nutation in experiments on nuclear magnetic resonance, by N. M. Nevskaya and others
Some investigations of the form of the oscillations of a spectral line, by A. N. Malakhov
Magnetic-sound oscillations in resonators, by Yu. F. Filippov
Absorption of magnetic-sound waves in waveguides, by Yu. F. Fillippov
Multi-conductor lines consisting of round wires, I. Two dimensionally periodic lines, by I. Sh. Beluga
Electromagnetic waves in a low-loss inhomogeneous nonlinear medium, by L. A. Ostrovskii
Possibility of comparison of three-dimensional electromagnetic systems with inhomogeneous anisotropic filling, by L. S. Dolin
Effective self-inductance coefficient of thin wires, by M. I. Kaganov
Use of antenna pattern scanning in certain radio-astronomic observations, by A. P. Molchanov and S. S. Gremyachenskii
Scattering of sound by turbulent compressible stream, by Yu. A. Ryzhov
Fluctuations in a long line, by V. P. Milant'ev
Characteristics of interaction between an electron beam and a dielectric slow-wave structure in the form of a thin-wall cylinder in a metal waveguide, by V. I. Yur'ev
On the efficiency of a two-cavity klystron at large output-signal amplitudes, by G. P. Petin
Expression for the electron interaction power in terms of surface integrals, by G. P. Petin.

Yankov, V. V.
THE BEHAVIOR OF A HIGH-PRESSURE ELECTRICAL ARC, tr. by B. W. Kuvshinoff. 28 Mar 62 [10]p. 8 refs. APL/JHU TG 230-T285.
Order from OTS or SLA $1.10 62-25067

Trans. of #Zhurnal Tekhnicheskoi Fiziki (USSR) 1961, v. 31, no. 11, p. 1324-1328.

DESCRIPTORS: *Electric arcs, *Electric discharges, Thermal conductivity, Gas flow, Hydrostatic pressure, Magnetic pinch.

The thermal mechanism of the constriction of an arc discharge proposed by W. Elenbaas (Physica 1: 211, 1934) is the framework within which the behavior of an arc is examined as affected by forces produced by energy losses resulting from thermal conductivity. In particular, it is shown that these forces induce a much larger increase in pressure in the arc column than does the pinch effect. (Applied Physics Lab. abstract)

Molecular Physics and Spectroscopy

Bolotin, V. F., Zavoiskii, E. K. and others.
THE USE OF ELECTRON-OPTICAL LIGHT AMPLIFIERS IN SPECTROSCOPIC INVESTIGATIONS OF A WEAKLY LUMINOUS PLASMA, tr. by A. L. Monks. [1961] [12]p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-4762

Trans. of mono. O Primenenie Elektronnoopticheskikh Usilitelei Sveta dlya Spektroskopicheskikh Issledovanii Slabosvetyashcheisya Plazmy, Moscow, 1960 [12]p.

DESCRIPTORS: *Plasma physics, Spectrographic analysis, *Electron optics, Optics, *Light, *Amplifiers, Luminescence, High frequency, Electromagnetic fields, Thermonuclear reactions, Photography.

The use of electron-optical light amplifiers in spectroscopic investigations of a plasma is examined. A 5-cascade light amplifier connected with a spectral apparatus makes it possible to fixate a very weak luminescence of a plasma in the form of a spectrum, thus, obtaining a temporary sweep. The inadequate resolution of the amplifier may be compensated by increasing the magnification. An electron-optical amplifier was used to photograph impulse discharge spectra when a high-frequency electromagnetic field interacts with a plasma. The temporary sweep of the spectra showed that the plasma glows brightly at certain times, corresponding to the magnetosound resonance. From the doppler expansion of the H_β line, the atomic temperature of the impulse discharge was estimated to be 2.10^4 °K. (Author)

Debras-Guedon, J. and Voinovitch, I. A.
A NEW METHOD FOR THE DIRECT ANALYSIS OF Sr, Ca, Na, Li, K IN THE PRESENCE OF Al, Ti, Fe, Mg IN SILICATES BY FLAME SPECTROPHOTOMETRY. [1962] 8p.
Order from ATS $13.25 ATS-28N57F

Trans. of mono. [International Conference on Spectroscopy (no. 8) Lucerne, 14-19 Sep 59. Proceedings] p. 171-175.

DESCRIPTORS: Strontium, Calcium, Sodium, Lithium, Potassium, Analysis, Aluminum, Titanium, Iron, Magnesium, *Silicates, *Flames, *Spectrophotometers, Photometers.

Prokhorov, V. G.
ANALYSE SPECTRALE QUANTITATIVE AU STYLOSCOPE (Kolichestvennyi Srektral'nyi Analiz na Stiloskope) [Quantitative Spectrum Analysis Using a Steeloscope) tr. by Bory. 10 Nov 61 [13]p. (Russian test included) 2 refs. CEA Trans. no. R 1433 (text in French).
Order from OTS or SLA $1.60 62-19012

Trans. in French of [Akademiya Nauk] SSSR. [Ural'skii Filial, Sverdlovsk. Gorno-Geol[ogicheskii] Inst[itut]. Trudy, 1958, no. 34, p. 67-70.

DESCRIPTORS: *Spectrographic analysis, Quantitative analysis.

Optics

Bonch-Brouevich, A. M.
REMARKS ON THE TREATMENT OF THE RESULTS OF A DIRECT EXPERIMENT PROVING THAT THE VELOCITY OF LIGHT IS INDEPENDENT OF THE VELOCITY OF A SOURCE OF RADIATION (K Voprosu ob Obrabotke Rezul'tatov Pryamogo Opyta po Proverke Nezavisimosti Skorosti Sveta ot Skorosti Istochnika Izlucheniya) tr. by J. Hardy. [1962] [6]p. (foreign text included). 3 refs. [CSIRO] Trans. 5703.
Order from OTS or SLA $1.10 62-23722

Trans. of Optika i Spektroskopiya (USSR) 1957, v. 2, no. 1, p. 141-142.

DESCRIPTORS: *Light, Velocity, Sources, Probability, *Relativity theory.

An analysis of previous experimental results (Doklady Akad. Nauk SSSR 109: 481, 1956 and Optika i Spektroskopiya 1: 113, 1956) shows that the probability that the velocity of light is independent of the velocity of movement of the source of radiation is about 10^{45} times greater than the probability that the velocity of light is equal to the vectoral sum of the velocity of light from a stationary source and the velocity of a source moving relatively to the observer.

Miloslavskii, V. K. and Ranyuk, A. I.
OPTICAL CONSTANTS OF CADMIUM OXIDE IN THE INFRARED REGION OF THE SPECTRUM. 19 Feb 62 [13]p. 16 refs. USASIA Trans. Log no. 1283-V.
Order from OTS or SLA $1.60 62-23319

Trans. of #Optika i Spektroskopiya (USSR) 1961, v. 11, no. 4, p. 536-541.

DESCRIPTORS: *Cadmium compounds, *Oxides, *Infrared spectroscopy, Semiconductors, Electrical conductance, *Optics, Absorption, Theory.

The optical constants of cadmium oxide semiconductors having a different concentration of carriers in a wavelength interval of 1.5 to 7 microns are measured. It is shown that absorption in this region is caused by conductance electrons. As a result of using the classical theory of high-frequency conductance, the effective mass and the mobility of the electrons in the interval of concentrations of 10^{20} to 10^{21} cm^{-3} are computed. The dependence of the mobility on the concentration of excess cadmium ions, which is determined by optical means, is explained by the theory of Conwell and Weisskopf. (Author)

Pepperhoff, W. and Pusch, R.
INCREASING CONTRAST IN INCIDENT-LIGHT MICROSCOPY BY REFLECTION-ENHANCING EVAPORATION FILMS. [1962] 4p.
Order from ATS $5.00 ATS-15P61G

Trans. of Z[eitschrift für] Wiss[enschaftliche] Mikroskop[ie und] Mikroskopische Technik] (West Germany) 1961, v. 65, no. 2, p. 88-91.

DESCRIPTORS: Optics, *Light, *Microscopy, Evaporation, Films, Reflection.

Solid State Physics

Babak, L. H., Bochek, S. A. and others.
TECHNICAL SILICON CARBIDE AS A MATERIAL FOR POINT-CONTACT DIODES. 23 Jan 62, 11p. 4 refs. JPRS: 12101.
Order from OTS $0.50 62-11112

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1961, v. 6, no. 4, p. 541-546.

DESCRIPTORS: *Diodes, Materials, *Silicon compounds, *Carbides, Crystals, Electrical properties, Temperature, Rectifiers, *Crystal rectifiers.

The basic parameters of crystals of silicon carbide, which characterize it as material for the manufacture of high-temperature point-contact diodes, are studied by a statistical method. A method of selection of silicon carbide crystals is proposed for point-contact diodes which can be used as rectifiers in the range of the radiofrequencies of signals with a voltage of 1-5 V at temperatures of the external environment up to 500°C. (Author)

Ioffe, A. F.
SEMICONDUCTOR THERMOELEMENTS: CHAPS. 3 AND 5. 18 Jan 62 [76]p. FTD-TT-61-96; AD-270 799.
Order from OTS or SLA $7.60 62-23377

Unedited rough draft trans. of mono. Poluprovodnikovye Termoelementy, Moscow/Leningrad, 1960, p. 82-125 and 156-181.

DESCRIPTORS: *Semiconductors, Materials, Solids, Liquids, Gases, Thermal conductivity, *Thermoelectricity, Conductivity, Thermionic emission, Theory, Solid state physics, Power supplies, Vacuum systems, Solar cells.

Contents:
Selection of material for thermoelements
Liquid, gaseous, and vacuum-type thermoelements.

Lungu, S. N.
A MECHANISM OF THE CRYSTALLIZATION OF GLASSES (Un Mecanism al Cristalizarii Sticlelor). [1962] [16]p. (foreign text included) 9 refs.
Order from SLA $1.60 62-14870

Trans. of Academia R[epublicii] P[opulare] R[omine]. Comunicarile, 1952, v. 2, no. 3/4, p. 243-248.

DESCRIPTORS: *Glass, *Crystallization, Crystals, Growth, Phase transitions.

Offergeld, G. and Cakenberghe, J. Van.
DETERMINATION OF THE COMPOSITION OF BINARY SEMICONDUCTORS AT THE CONGRUENT MELTING POINT BY DIFFERENTIAL THERMAL ANALYSIS: APPLICATION TO Bi_2Te_3, Sb_2Te_3 AND Bi_2Se_3. [1961] 6p. (5 figs. omitted) 5 refs.
Order from SLA $1.10 62-14087

Trans. of Physics and Chemistry of Solids (U. S.) 1959, v. 11, p. 310-314.

DESCRIPTORS: *Bismuth alloys, *Tellurium alloys, *Antimony alloys, *Selenium alloys, Melting, *Semiconductors, Single crystal, Electrical properties, Liquids, Solids, Transition temperature.

Piguzov, U. V.
A STUDY OF INTERNAL FRICTION IN THE GAMMA AND ALPHA PHASES OF HIGH CHROMIUM CONTENT STEEL. Apr 58 [7]p. 11 refs. BISI Trans. no. 825; NLL M. 4119.
Order from OTS or SLA $1.10 62-24126

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 112, no. 4, p. 636-639.

DESCRIPTORS: *Steel, Chromium alloys, *Internal friction, Temperature, Phase studies, Lattices, Dislocations, Relaxation time.

Suchet, J. P.
ATOMIC RADII, ELECTRONEGATIVITIES AND ACTIVATION ENERGIES IN THE INORGANIC SEMICONDUCTOR COMPOUNDS. [1962] [22]p. [refs. omitted].
Order from SLA $2.60 62-14461

Trans. of Physics and Chemistry of Solids (U. S.) 1960, v. 16 [no. 3/4] p. 265-278.

DESCRIPTORS: *Semiconductors, *Inorganic substances, *Atomic radii, Atomic structure, Atoms, Resonance, Lattices, Energy, Intermetallic compounds, Equations

Theoretical Physics

Idlis, G. M.
CAUSALITY AS A BASIS OF COSMOLOGY. 8 Mar 62 [47]p. 14 refs. JPRS: 12860.
Order from OTS or SLA $4.60 62-23405

Trans. of [Akademiya Nauk Kazakhskoi SSR] Alma-Ata. Astrofizicheskii Institut. Izvestiya, 1961, v. 12, p. 37-55.

DESCRIPTORS: *Philosophy, *Relativity theory, *Quantum mechanics, Galaxies, Solar systems, Time, Physics.

Cosmology, and science in general is based on the experimental fact of causality. But where particular sciences lean not only on causality but also on other less general principles, cosmology essentially follows of necessity from the cause-effect structure of the world. From causality follow directly fundamental cosmological premises such as (1) directivity, one-dimensionality, and infinite nature of time; (2) three-dimensionality and infinite nature of space; (3) connectivity of the universe, i.e. connectivity of the infinite four-dimensional space-time manifold; (4) the universal cosmological principle of natural uniqueness of all the characteristics of the unique all-inclusive universe; (5) the equivalents of the universe as a whole to a maximally homogeneous physical vacuum; (6) the principle of elementary reversibility of all the dynamic laws of physics and the statistical irreversibility of macroscopic processes in all real finite systems; and (7) the reducibility of the summary statistical action of a macroscopic spherically symmetrical body to the action of a corresponding material point and the proportionality of this action to the inverse square of the distance.

Kompaneets, A. S.
PHYSICS IN THE SOVIET UNION. [1962] lv.
Order from Philosophical Library, Inc., 15 E. 40th St., New York, 16, N. Y. $6.00

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Physics, Theory, *Mechanics, Electromagnetism, *Electromagnetic fields, *Dynamics, Electromagnetic waves, Relativity theory, *Quantum mechanics.

Contents:
Mechanics
Electrodynamics
Quantum mechanics.

Thermodynamics

Avduevskii, V. S., Danilov, Yu. I. and others.
FUNDAMENTALS OF HEAT-TRANSFER IN AVIATION AND ROCKET ENGINEERING. 26 Apr 62 [656]p. 149 refs. FTD-TT-61-46. AD-274 925.
Order from OTS or SLA $28.50 62-24356

Unedited rough draft trans. of mono. Osnovy Teploperedachi v Aviatsionnoi i Raketnoi Tekhnike, Moscow, 1960, 389p.

DESCRIPTORS: *Heat transfer, Convection, Thermal conductivity, Thermal radiation, *Heat exchangers, Theory, *Gas flow, Temperature, Velocity, Laminar boundary layer, Boundary layer, Turbulent flow, Chemical reactions, Hydrodynamics, Surfaces, Cooling, Sweat cooling, *Jet engines, Combustion chambers, Nozzles, *Liquid rocket propellants, *Rocket motors, Rocket motor nozzles, Superaerodynamics, Aircraft, Supersonic planes, Heating, Thermal insulation, *Satellite vehicles, *Aerodynamic heating, *Power reactors.

Contents:
Types of heat exchange, fundamental concepts and definitions
Convective heat exchange and fundamentals of theory of similarity
Thermal conductivity under steady-state conditions
Heat exchange with variation in aggregate state of matter
Radiant heat exchange
Theory and calculation of heat exchangers
Thermal conductivity in non-stationary conditions
Heat exchange at high velocities and high temperatures of gas flow
Heat exchange during chemical reactions in the boundary layer
Hydrodynamic methods of firmly protecting surfaces; sweat cooling
Barrier and combined cooling of combustion chamber walls and nozzles in jet engines
Film cooling of walls of combustion chamber and nozzles in liquid propellant rocket engines

Concept of heat exchange in rarefied gases
Some aspects of the calculation of the heat-up of winged flying craft; methods of thermal protection
Some features of heat transfer calculations in liquid propellant rocket engines
Heat conditions in craft flying in upper layers of atmosphere (artificial earth satellites)
Some features of heat transfer in nuclear power reactors.

Borishanskii, V. M., Ivashchenko, N. I., and Zablotskaya, T. V.
THE CALCULATION OF HEAT TRANSFER IN TUBES WITH A TURBULENT FLOW OF LIQUIDS WITH SMALL PRANDTL NUMBERS ($Pr \ll 1$).
23 Mar 62 [12]p. 12 refs. FTD-TT-62-19; SC-1037; ASTAR 2566.
Order from OTS or SLA $1.60 62-24270

Unedited rough draft trans. of #Atomnaya Energiya (USSR) 1961, v. 11, no. 5, p. 426-430.

DESCRIPTORS: *Turbulent flow, Pipes, *Heat transfer, Fluid flow, Boundary layer, Liquid metals, Velocity, Temperature, Specific heat, Viscosity, Thermal conductivity, Numerical analysis.

An account is given of a method for calculating heat transfer in turbulent flow by a three-layer thermal flow diagram at $Pr \ll 1$. A comparison is given of temperature fields calculated by the three-layer diagram and method test data. (Author)

Budnikov, P. P. and Mchedlov-Petrosyan, O. P.
THE THERMODYNAMICS OF THE MODIFICATION OF KAOLINITE INDUCED BY HEATING (K Termodynamiki Izmeneniya Kaolinita pri Nagrevanii) tr. by G. N. Gibson. Jan 61 [6]p. 10 refs. DSIR Library Communication no. 1023; [NLL] M 3262.
Order from OTS or SLA $1.10 62-24612

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 134, no. 2, p. 349-350.

DESCRIPTORS: *Clays, Tranformations, Heating, *Thermodynamics.

Cherneeva, L. I.
EXPERIMENTAL INVESTIGATION OF THE THERMODYNAMIC PROPERTIES OF FREON-142 (Eksperimental'noe Issledovanie Termodinamicheskikh Svoistv Freona-142). Apr 62 [15]p. 10 refs. RTS 2033.
Order from OTS or SLA $1.60 62-24372

Trans. of Teploenergetika (USSR) 1958 [v. 5] no. 7, p. 38-43.

DESCRIPTORS: *Ethanes, *Thermodynamics, Temperature, Boiling, Liquids, Density, Measurement, Instrumentation, Equations of state, Gases, Fluoxides, Chlorides.

The method and the experimental results of the investigation of the thermodynamic properties of freon - 142 in the temperature range from -60° C up to critical point are described. The pv-p diagram for freon - 142 is presented. (Author)

Efros, D. A. and Kuranov, I. F.
CALCULS DE L'ÉCOULEMENT D'UN LIQUIDE GAZEIFIÉ, AYANT UNE CARACTÉRISTIQUE DES PERMÉABILITIES A DEUX PARAMETRÉS (O Raschetakh Techenii Gazirovannoi Zhidkosti pri Dvuparametricheskoi Kharakteristike Pronitsaemostei) [Calculations of the Flow of a Gas-Saturated Liquid with Two-Parameter Permeability Characteristics] tr. by Schirmann. 28 Nov 61 [13]p. (Russian text included) 10 refs. CEA Trans. no. R 1444 (text in French).
Order from OTS or SLA $1.60 62-19009

Trans. in French of Akad[emiya] Nauk SSSR. Dokl[ady] 1960, v. 132, no. 3, p. 553-556.
A trans. in English is available from ATS $7.60 as ATS-14M47R [1961] 5p.

DESCRIPTORS: *Fluid flow, Analysis, *Gases, Permeability.

Godnev, I. N. and Sverdlin, A. S.
THERMODYNAMIC FUNCTIONS OF DICHLOROBENZENES. [1962] 15p.
Order from ATS $18.95 ATS-04P59R

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1950, v. 24, no. 6, p. 670-682.

DESCRIPTORS: *Benzenes, *Chlorides, *Thermodynamics.

Kazavchinskii, Ya. Z. and Katkhe, O. I.
AN EQUATION OF STATE FOR STEAM (Uravnenie Sostoyaniya dlya Vodyanogo Para). Mar 62 [11]p. 15 refs. RTS 2058.
Order from OTS or SLA $1.60 62-24365

Trans. of Teploenergetika (USSR) 1958 [v. 5] no. 7, p. 26-30.

DESCRIPTORS: *Steam, *Equations of state, Enthalpy, Specific heat, Temperature, Thermodynamics, Mechanical engineering.

An equation of state for steam suitable for the calculation of thermal and calorific values from zero density to twice the critical density over a wide range of temperature change is presented. (Author)

Rabinovich, V. A.
EQUATION D'ÉTAT POUR LE DEUTÉRIUM [Equation of State for Deuterium] tr. by Mme. Mihailovic. 10 Nov 61 [11]p. 7 refs. CEA Trans. no. R 1429 (text in French).
Order from OTS or SLA $1.60 62-19020

Trans. in French of In[zhenerno] Fiz[icheskii Zhurnal] (USSR) 1960 [v. 3] no. 6, p. 107-111.

DESCRIPTORS: *Equations of state, *Deuterium, Thermodynamics, Temperature, Pressure, Mathematical predictions.

Wave Propagation

Alekseev, A. S.
DYNAMICS PROBLEMS OF ELASTICITY THEORY. VI. PROBLEMS OF THE LAMB TYPE FOR THE WAVE EQUATION IN A LINEAR NONHOMOGENEOUS HALF-SPACE [Dinamicheskie Zadachi Teorii Uprugosti, no. 6] 27 Mar 62 [70]p. 17 refs. FTD-TT-61-191.
Order from OTS or SLA $6.60 62-24913

Unedited rough draft trans. of Leningrad U. Uchenye Zapiski (USSR) 1958, no. 246, p. 167-227.

DESCRIPTORS: *Elasticity, Theory, *Wave analysis, Seismic waves, Electromagnetic waves, Sound, Oscillation, *Propagation, Functions, Integrals, Differential equations

An examination is made of problems concerning the propagation of non-steady-state perturbations in a half-space the oscillatory processes in which can be described by a single wave euqation with a rate which is a linear function of the distance to the boundary. The oscillation source is assumed to be located on the boundary of a half-space which is at rest up to a certain moment in time. An accurate solution of the boundary problem for the wave equation in a linear nonhomogeneous half-space is set up by the method of partial division of variables when the unknown function or its normal derivative is assigned at the boundary. The solutions are then studied to set up the equations of the fronts of waves propagated in a half-space and

the formulas of the shifts in the vicinity of the fronts. It is assumed that a spatially concentrated, sharply definable oscillation source acts at the boundary. The calculated wave-front intensities in the work are the discontinuity factors of the solutions. Ordinary differential equations are set up for these factors along the rays. After determining the discontinuity factors of the solution at the wave front, the question concerning the nature of the field in the vicinity of the wave front is explained by studying the accurate solution of the corresponding boundary problem for the wave equation.

Armand, N. A., Vredenskii, B. A. and others.
LONG-RANGE TROPOSPHERIC PROPAGATION OF ULTRASHORT RADIOWAVES (SURVEY). 26 Feb 62 [27]p. 119 refs. USASIA Trans. Log no. 1244-Z.
Order from OTS or SLA $2.60 62-23318

Trans. of #Radiotekhnika i Elektronika (USSR) 1961, v. 6, no. 6, p. 867-885.

DESCRIPTORS: *Atmosphere, *Radio waves, *Propagation, Bibliography, Meteorology.

Askar'yan, G. A.
ON THE GENERATION OF MILLIMETER BAND RADIOWAVES WHEN A BUNCH OF ELECTRONS PASSES THROUGH A RETARDING MEDIUM [O Generatsii Radiovoln Millimetrovogo Dyapazona pri Prokhozhdenii Elektronnogo Sgustka Cherez Tormozyashchuyu Sredu]. [1961] 2p. 3 refs. MDF A-119.
Order from OTS or SLA $1.10 62-23225

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1954, v. 27. no. 6(12) p. 761.

DESCRIPTORS: *Radio waves, Production, *Electrons, Density, Electric fields, Magnetic fields, Waveguides.

Azbel', M. Ya.
ON THE THEORY OF SKIN-EFFECT IN A CONSTANT MAGNETIC FIELD [K Teorii Skin-Effektva v Postoyannom Magnitom Pole]. [1961] 6p. 5 refs. MDF A-124.
Order from OTS $0.50 62-11425

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 3, p. 437-440.

DESCRIPTORS: *Metals, Conductors, *Surfaces, *Electromagnetic waves, *Propagation, *Electromagnetic wave reflections, *Magnetic fields, Electrons, Electric fields, Alternating current, Energy, Motion, Relaxation time, Theory, Polarization, Statistical functions, Differential equations.

The surface impedance is found in a constant magnetic field $\vec{H}$ parallel to the surface of the metal. The reflection of the electrons from the surface is considered to be diffuse. (Author) (See also 62-11424)

Chernov, L. A.
CORRELATION OF THE AMPLITUDES AND PHASES IN WAVE PROPAGATION IN STATISTICALLY-INHOMOGENEOUS MEDIA [Korrelyatsiya Fluktuatsii Amplitudy i Fazy pri Rasprostranenii Volny v Staticheski Neodorodnoi Srede]. [1961] 7p. 4 refs. MDF C-103.
Order from OTS $0.50 62-11297

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 98, no. 6, p. 953-956.

DESCRIPTORS: *Amplitude modulation, *Phase modulation, Modulation, Propagation, *Correlation techniques, Statistical functions, Perturbation theory, Refractive index.

The question is considered of the correlation of the amplitudes and phases at a point receiver as well as the question of the correlation of the fluctuations of the amplitudes (or phases) at different points of the receiver. It is shown that the correlation between the fluctuations of the amplitudes (or phases), in the case of large-scale inhomogeneities, extends a distance of the same order as the correlation between random inhomogeneities of the medium itself. Both questions are considered under the assumption that the medium is isotropic, that there are no regular variations in homogeneity, that the random deflections of the refractive index of the medium from the average value are small and that their scale is large in comparison with the wavelength. (Author)

Fink, L. M.
ON THE APPLICABILITY OF BINARY CORRECTING CODES IN TRANSMISSION CHANNELS OF DISCRETE INFORMATION. 13 Feb 62 [14]p. 8 refs. FTD-TT-62-45; AD-273 403.
Order from OTS or SLA $1.60 62-23659

Unedited rough draft trans. of #Radiotekhnika (USSR) 1961, v. 16, no. 10, p. 3-9.

DESCRIPTORS: *Coding, Sequences, Probability, *Errors, *Information theory, Inequalities, *Radio signals, Transmission, *Data transmission systems, Noise (Radio).

Using asymptotic expressions for the equivalent probability of error, the conditions of "acceptability" are derived for a correcting code. These conditions are satisfied by very few of the codes described in the literature. In channels with fading, these conditions may be made less rigid if the measure and decorrelation of error are taken in constructing the code. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACADEMY PRESIDENTS' REPORT ON THE WORK OF REPUBLIC SCIENTIFIC ESTABLISHMENTS BETWEEN THE 21ST AND 22ND COMMUNIST PARTY CONGRESSES. 30 Mar 62 [38]p. JPRS: 13327.
Order from OTS or SLA $3.60 62-23831

Trans. of Nauka i Zhizn ' (USSR) 1961, [v. 28] no. 10, p. 2-17.

DESCRIPTORS: *Scientific research, Communism, Growth.

Consists of reports by Kh. M. Abdulaev, V. A. Ambartsumyan, Sh. B. Batyrov, I. G. Eykhfel'd, Ya. S. Grosul, K. K. Karakeev, M. V. Keldysh, V. F. Kuprevich, Yu. G. Mamedaliev, Yu. Yu. Matulis, N. I. Muskheshvili, A. V. Palladin, K. K. Plaude, K. I. Satpaev, S. V. Vmarov.

GENERAL MEETING OF THE ACADEMY OF SCIENCES KAZAKH SSR, 27-28 NOV 61. 9 Apr 62 [89]p. JPRS: 13434.
Order from OTS or SLA $8.10 62-23810

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik, 1961 [v. 17] no. 12(201) p. 3-80.

DESCRIPTORS: *Conferences, *Science, *Scientific organizations, Scientific personnel, Personnel, Physics, Mathematics, Geology, Chemistry, Biology, Medicine, Social sciences, Research program administration.

Contents:
Address to the central committee of the Communist Party of the Soviet Union, to Comrade N. S. Khrushchev
The decisions of the general Assembly of the Academy of Sciences of the Kazakh SSR relating to the tasks of academician in light of the resolutions of the Congress of the CPSU (no. 22)
The 22nd Congress of the CPSU and the tasks of the development of science in Kazakhstan, by K. I. Satpaev
The 22nd Congress of the Communist Party of the Soviet Union and the development of the physico-mathematical sciences in the Academy of Sciences of the Kazakhstan SSR, by M. V. Pentkovskii
The 22nd Congress of the CPSU and the development of the geological, technical, and chemical sciences in the Academy of Sciences of the Kazakh SSR, by R. A. Borukaev
The 22nd Congress of the CPSU and the development of the biological and medical sciences and arts in the Academy of Sciences of the Kazakh SSR, by N. U. Bazanov
The 22nd Congress of the CPSU and the development of the social sciences in the Academy of Sciences of the Kazakh SSR, by S. N. Pokrovskii
The concluding words of the president of the Academy of Sciences of the Kazakh SSR, academician K. I. Satpaev, at the general assembly of the Academy of Sciences of the Kazakh SSR
Toward a new blossoming of science in Kazakhstan.

HERALD OF THE ACADEMY OF SCIENCES USSR, 1962, NO. 3; [SELECTED] ARTICLES. 13 June 62 [126]p. JPRS: 14143.
Order from OTS or SLA $10.10 62-25176

Trans. of Akademiya Nauk SSSR. Vestnik, 1962 [v. 32] no. 3, p. 3-36, 40-50, 75-78, 85-125.
##Another trans. of p. 24-34 is available from OTS or SLA $1.60 as 62-24968, JPRS-13977, 28 May 62 [18]p.

DESCRIPTORS: Conferences, Scientific organizations, Physics, *Metals, Industrial research, Carbohydrates, *Glycogen, *Saccharides, Starches, Biochemistry, *Cells (Biology), Culture media, *Microscopes, High temperature research, Coatings, Polymers, *Plastic coatings, Stresses, Measurement, Instrumentation.

Contents:
Annual conference of the Academy of Science USSR, 6-7 Feb 62
##Modern physics of metals and problems of new technology, by E. M. Savitskii
New ferment preparation, by A. N. Petrova
Circulating culture method and its value for analyzing cell functions, by N. C. Ierusalimskii
High temperature microscope, by N. A. Toropov and others
Instrument for studying polymeric coatings, by P. I. Zubov and L. A. Lepilkina
News items on delegations, symposiums, and meetings
Gold medal rewards
Studies on new technological developments
Memorable dates (readings, sessions)
Defense of dissertations.

TRANSLATIONS OF REPORTS ON SOVIET SCIENTIFIC CONFERENCES AND ORGANIZATIONS. 13 Mar 62 [84]p. JPRS: 13033.
Order from OTS or SLA $8.10 62-23610

Trans. of 20 selected articles from 1961 issues of 13 Russian periodicals.

DESCRIPTORS: *Conferences, *Scientific organizations, USSR, *Rubber, Carbon black, *Asbestos fibers, Tires, Industry, Silkworms, Siberia, *Diesel engines, Construction, Chemistry, Complex compounds, *Cobalt compounds, *Nickel compounds, *Chromium compounds, *Agriculture, *Benzine, *Housing, Industrial plants, *Wood, Medical personnel, Recreation, Physical chemistry, Chemical analysis, *Minerals, Ores, Rock, Chemists.

Contents:
Conference on the improvement of scientific-technical information in the rubber, lampblack, regenerator, asbestos, and tireretreading industries, by I. A. Sheftel'
A symposium on the problem of the Siberian silkworm, by N. G. Kolomiets and A. B. Gukasyan
Specialized conference on diesel construction, by L. K. Kollerov
General meeting of the Chemical Sciences Section of the USSR Academy of Sciences on 24-25 Nov 60
A conference on the chemistry of complex cobalt and nickel compounds, by D. G. Batyr
A conference on prospects for the further development and technical progress in the production of chromium compounds, by A. M. Polyak
Study of the legacy of D. I. Mendeleev and the realization of his ideas, by A. A. Makarenya
A conference on the chemization of agriculture in Orenburgskaya oblast, by A. Kh. Batalin
Some results of the work of the Moscow administration of the All-Union Chemical Society imeni D. I.

D. I. Mendeleev in 1960, by E. F. Stroganov
Scientific-technical conference on the problems of benzine production, by V. L. Klimenko
A new institute
A unified scientific-experimental and planning center for large-panel housing construction
Session of the Scientific Council of the TsNILKhI (Central Wood Chemistry Research Institute) by B. Yasinskii
Scientific-technical conference on the complex use of wood
Republican conference of medical workers
Winters Workers' Spartakiada in Minskaya oblast, by A. Belyatko
Conference on physico-chemical analysis, by E. Shvarts
Problems of magma and the genesis of eruptive mineral ores, by A. P. Lebede
Conference on Experimental and Technical Mineralogy and Petrography (no. 6) by G. Naumov and others
The Ukrainian Conference on Physical Chemistry, by A. S. Afanas'ev.

Alpatov, N.
CYBERNETICS IN MILITARY SCIENCE. 13 Apr 62 [14]p. JPRS: 13456.
Order from OTS or SLA $1.60 62-24001

Trans. of Radio, Moscow (USSR) 1962, no. 2, p. 3-5.

DESCRIPTORS: * Cybernetics, Science, Military research, Engineering, Military operations.

Golubkov, Yu. A., Korolev, L. N., and Lebedev, A. V.
SELECTION OF A SYSTEM OF INSTRUCTIONS FOR A THREE-ADDRESS COMPUTING AND LOGICAL MACHINE WITH A FLOATING POINT. Foreign Developments in Machine Translation and Information Processing, no. 65. 17 Jan 62 [42]p. 3 refs. JPRS: 11985.
Order from OTS or SLA $4.60 62-15443

Trans. of mono. (bulletin) O Vybore Sistemy Komand dlya Trekhadresnoi Vychislitel'noi i Logicheskoi Mashiny Plavayushchei Zapyatoi, Moscow, 1961, 40p.

DESCRIPTORS: *Machine translation, *Digital computers, Computers, *Computer logic, Coding, Mathematical logic, Instruction manuals, Engineering, Data, Processing.

The general mathematical premises are examined for (Research Methods, Techniques and Equipment, TT, the development of a universal three-address machine with a floating point, intended for the solution of engineering and logical problems. Some of the conclusions can also be used in the design of single-address and two-address machines. Two possible variants of construction are presented. In the first case the machine is intended for the solution of engineering and logical problems of small volume. This machine has 42 binary discharges and a MOZU (magnetic operative memorizing arrangement) for 2048 words. In the second case the machine, although capable of solving engineering problems, is intended primarily for the solution of large logical problems, particularly problems of translation from one language, into another. This machine has 48 binary ranks which makes it possible to address the MOZU with 8192 words. Special coding of addresses permits addressing the MOZU with 131,072 words with the same ranking of the machine. It is proposed to use the same system of instructions in both cases. (Author)

Kapitsa, P. L.
THE FUTURE OF SCIENCE. 4 June 62 [21]p. JPRS: 14042.
Order from OTS or SLA $2.60 62-25057

Trans. of Nauka i Zhizn' (USSR) 1962, v. 29, no. 3, p. 18-23 and 96-97.

DESCRIPTORS: *Science, *Scientific research, Research program administration, Scientific personnel, Personnel, Training.

Karakeev, K.
FOR THE FURTHER DEVELOPMENT OF SCIENCE IN KIRGIZIA. 13 Apr 62 [10]p. JPRS: 13469.
Order from OTS or SLA $1.10 62-24007

Trans. from Sovetskaya Kirgiziya (USSR) 1961, 27 Sep, p. 2-3.

DESCRIPTORS: *Science, *Scientific research, Research program administration, Scientific organizations

Martem'yanov, Yu. S.
THE CODING OF WORDS FOR AN ALGORITHM OF SYNTACTIC ANALYSIS. Foreign Developments in Machine Translation and Information Processing, no. 89. 4 Apr 62 [3]p. 1 ref. JPRS: 13321.
Order from OTS or SLA $2.60 62-23832

Trans. of Konferestsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 10, 20p.

DESCRIPTORS: *Machine translation, Language, Coding.

Moloshnaya, T. N.
EXPERIMENTAL ENGLISH-TO-RUSSIAN TRANSLATIONS ON THE "STRELA" MACHINE. Foreign Developments in Machine Translation and Information Processing, no. 82. 28 Mar 62 [9]p. JPRS: 13195.
Order from OTS or SLA $1.10 62-23641

Trans. of Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 9, 6p.

DESCRIPTORS: *Machine translation, Digital computers, Computers, Scheduling, Experimental data, Errors.

Stroeble, Walter.
OPTICAL ILLUMINATION SYSTEM FOR PROJECTORS (Optisches Beluchtungssystem für Bildwerder) tr. by Allan I. Ross. Oct 61 [6]p. 3 refs.
AmMetSoc T-G-168*.
Order from OTS or SLA $1.10 62-23354

Trans. of German patent 747917, cl. 42h, gr. 2302, pat. from 19 July 39, grant announced 9 Mar 44 (according to part 2 of paragraph one of the Public Law of 20 July 40, patent also valid for Bohemia and Moravia).

DESCRIPTORS: Film projectors, Illumination, *Optical systems, Design.

Trapeznikov, B. A.
CYBERNETICS AND AUTOMATIC CONTROL. 18 June 62 [19]p. JPRS: 14152.
Order from OTS or SLA $1.60 62-25181

Trans. of Priroda (USSR) 1962 [v. 21] no. 4, p. 27-34.

DESCRIPTORS: *Cybernetics, Man, Automation, Automatic, Control, *Control systems, Operation.

Communication Theory

Lyutov, S. A. and Gusev, G. P.
SUPPRESSION OF INDUSTRIAL RADIO NOISES, CHAPS. 4-5 AND CONTENTS. 7 June 62 [73]p. JPRS: 14054.
Order from OTS or SLA $7.60 62-25192

Trans. of mono. Podavlenie Industrial'nykh Radiopomekh, Moscow, 1960, p. 161-224 and p. 317-318

DESCRIPTORS: Telegraph equipment, *Telegraph systems, Telephones, *Telephone communication systems, *Noise (Radio), *Suppressors.

Contents:
Suppression of radio noises created by telegraph apparatuses
Suppression of radio noises produced by telephone apparatuses
Table of contents.

Schlicht, U.
EQUIPMENT FOR MEASURING THE QUALITY OF SERVICE IN DIAL CENTRAL OFFICES. [1962] [18]p. 10 refs.
Order from SLA $1.60 62-14788

Trans. of Siemens Zeitschrift (West Germany) 1961, v. 35, no. 8, p. 574-578.

DESCRIPTORS: *Telephones, Telephone communication systems, *Telephone lines, Maintenance, Quality control, Test equipment.

USSR CONSUMER GOODS AND DOMESTIC TRADE: SELECTED TRANSLATIONS NO. 4. 22 Apr 61, 68p. JPRS: 8136.
Order from OTS $1.75 61-21618

Trans. of Sakharnaya Promyshlennost' (USSR) 1960 [v. 34] no. 7, p. 12; 1961 [v. 35] no. 1, p. 2 (excerpt); Tekstil'naya Promyshlennost' (USSR) 1960 [v. 20] no. 11, p. 1; Master Lesa (USSR) 1961, no. 1, p. 1-2; Molochnaya Promyshlennost' (USSR) 1961 [v. 22] no. 1, p. 1-2 (excerpts); Sovetskaya Torgovlya (USSR) 1961, no. 1, p. 3-5 (excerpts); Sovetskaya Potrebitel'skaya Kooperatsiya (USSR) 1961, no. 1, p. 2 (excerpt); Obshchestvennoe Pitanie (USSR) 1961, no. 1, p. 11-13; also 24 selected articles and excerpts of articles from 18 Russian newspapers.

DESCRIPTORS: *Commerce, *Economics, *Industrial production, *Food, Milk, Carbohydrates, Refineries, *Textile industry, Furniture, *Paper industry.

Contents:
Construction of sugar enterprises in Siberia and in the Far East
Development of the textile industry
Construction of furniture enterprise
New cellulose-paper combine
The dairy industry in the third year of the Seven-Year Plan, by V. Zotov
The construction of sugar refineries
RSFSR production of consumer goods in 1960
Ukrainian SSR production of consumer goods in 1960
Trade in 1961 (based on an interview with V. Zotov)
Increased commodity stock norms, by P. Tikhonov
A reliable supply base for retail trade, by V. Polunov
A further increase in cooperative trade
Public catering production is being developed but what about the administrative structure, by S. Svitich
In the third year of the Seven-Year Plan: concerning the plan for the development of trade in the RSFSR, by U. Sapel'nikov
Trade discounts and economic accountability, by G. Gofman
An important link: improve whole trade, by R. Vester
The further development of public catering, by V. Trofimova
1960 commodity turnover (16 articles).

Camier, Marie-Claire.
LIABILITY AND INSURANCE OF THE ATOMIC RISK IN THE EUROPEAN LAW SYSTEMS. Doctoral dissertation, Dijon U. (France). Jan 62, 158p. 85 refs.
Order from OTS $2.75 AEC-tr-4515

Trans. of mono. (thesis) Responsabilité et Assurance du Risque Atomique dans les Droits Européens, Paris, 1960.

DESCRIPTORS: Theses, *Atomic energy, *Radioactive isotopes, Fission products, Accidents, Radiobiology, Radiation effects, Nuclear energy, Production, Public health, Particle accelerators, Radioactive waste, Probability, Safety, Hazards, Transportation, *Atomic energy engineering, Engineering, Engineering personnel, *Legislative liaison, *Health insurance, *Political science, Europe.

Efremov, I. A.
SCIENCE AND SCIENCE FICTION. 4 June 62, 12p.
JPRS: 13994.
Order from OTS $0.50 62-11673

Trans. of Priroda (USSR) 1961 [v. 50] no. 12, p. 41-47.

DESCRIPTORS: Science, Scientific research, *Literature, Reading.

American and Soviet science-fiction are compared and analyzed. The proper role of science-fiction is seen as "the attracting of attention to yet unutilized or forgotten possibilities" of science. And while science-fiction "is not capable of leading science" it still "should exert a considerable influence on broadening the vision of scientists and hence also on the development of science . . . The dream of the application of scientific achievements to man for his benefit, to transform nature, society, and man himself is the essence of genuine science fiction."

Fedorov, E. K.
SCIENCE AND INDUSTRY (Nauka i Proizvodstvo).
[1962] [8]p. NLL M. 3522.
Order from OTS or SLA $1.10 62-23870

Trans. from Ekon[omicheskaya] Gaz[eta] (USSR) 1961, 7 Jan, p. 3.

DESCRIPTORS: *Science, *Industry, Industrial production, Communism, Growth, Economics.

The Communist Party of the Soviet Union and the Soviet Government are continuously concerned about the prosperity of science in our country, to create all the conditions for fruitful work by scientific institutions, laboratories and institutes, and the development of investigations in the most diverse fields of knowledge. This concern is manifested in the systematic broadening of the activity of the Academy. In the current year nine new Institutes have been set up in the Academy of Sciences, including six in the Autonomous Republics, in Siberia and in other regions. (Extract)

Huttunen, J., Pensala, V., and Valve, V.
ABOUT SMOKING AMONG SCHOOL PUPILS. Feb 61, 8p.
Order from K-H $10.00 K-H 10607-b

Trans. of Duodecim (Finland) 1960, v. 76, p. 487-492.

DESCRIPTORS: *Tobacco, Consumption, *Students.

Lengwinat, A.
COMPARATIVE STUDIES ON THE FREQUENCY OF SUICIDES IN THE TWO GERMAN STATES.
17 Nov 61 [20]p. JPRS: 11140
Order from OTS or SLA $1.60 62-19747

Trans. of Deutsche Gesundheitswesen (East Germany) 1961, v. 16, no. 19, p. 873-878.

DESCRIPTORS: *Vital statistics, Psychology, Geography, Sociology, Age factors, Economics, *Germany.

Matveenkov, I. I. and Moskalenko, A. T.
SIBERIAN ACADEMY OF SCIENCES ON PROBLEMS IN THE COMMUNIST EDUCATION OF THE LABORER. 20 Feb 62 [9]p. JPRS: 12661.
Order from OTS or SLA $1.10 62-24788

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1961, no. 7, p. 126-129.

DESCRIPTORS: *Communism, Siberia, *Labor, *Education.

Topics are noted that were discussed at the "scientific conference of philosophers of Siberia and the Far East" which took place in Novosibirsk from 25 to 28 January 1961. Names are given of some persons who read papers, titles of some of the papers are given, and occasionally brief descriptions are supplied.

Staszewski, Jerzy and Wisniewski, K.
PRELIMINARY STUDIES ON STRUCTURE OF TOBACCO CONSUMPTION IN POLAND. [1962] 24p.
Order from K-H $30.00 K-H-11203

Trans. of Roc[zniki] Nauk Roln[iczych. Seria]A: [Roslinna] (Poland) 1960, v. 81, no. 4, p. 975-990.

DESCRIPTORS: *Tobacco, Consumption, *Poland, Economics.

TRANSLATIONS IN PROCESS

Amann, A. and Schafer, H.
[ENGLISH TITLE NOT GIVEN]
Pflugers Archiv für die Gesamte Physiologie [des Menschen under der Tiere] (Germany) 1943, v. 246, no. 6, p. 757-789.

Bagdoev, A. G.
SPATIAL NON-STATIONARY MOTIONS OF SOLID MEDIUM WITH SHOCK WAVES.
Prostranstvennye Nestatsionarnye Dvizheniya Sploshnoi Sredy s Utsarnymi Volnami, Erevan, 1961, 276p.

Chevallier, F.
[NO ENGLISH TITLE GIVEN] (L'Espage Cholesterol du Rat).
Arch[ives des] Sc[iences] Physiol[ogiques] (France) 1956, v. 10, p. 249-275.

Dekeyser, P. L. and Derivot, J.
SERPENTS AND VENINS; BITES AND TREATMENTS.
[Institut Francais d'Afrique Noire. Bulletin, Serie A: Sciences Naturelles (Senegal) ?] 1960, spec. no. 85, 36p.

Dubinin, N. P.
PROBLEMS OF RADIATION GENETICS.
Problemy Radiatsionnoi Genetiki [Moscow] 1961, 468p.

Fuks, B. A.
INTRODUCTION TO THE THEORY OF ANALYTIC FUNCTIONS OF SEVERAL COMPLEX VARIABLES.
Russian mono. 2d ed. pub. Moscow, 1962, 419p.
To be published by American Mathematical Society.

Heydt, Günter and Volland, H.
A RECORDING RECEIVER FOR VERY LONG WAVES [AND] DAYTIME PROPAGATION OF VERY LOW FREQUENCY WAVES OVER A DISTANCE OF 1000 KM.
Heinrich Hertz Institute, n. p., n. d., repts. 35 and 37.

Hillemanns, Hans-Günther.
REGIONAL LYMPH NODE REACTION IN THERAPEUTIC RADIUM-ROENTGEN IRRADIATION FOR CARCINOMA OF THE CERVIX (Die Reaktion der Regionaeren Lymphknoten auf die Therapeutisch Radium-Röntgen-Bestrahlung bei Kollumkarzinom).
Z[eitschrift für] Geburtsh[ilfe und Gynäkologie] (West Germany) 1957, ser. 2, v. 14, p. 156-196.

Kubilyus, I.
PROBABILISTIC METHODS IN THE THEORY OF NUMBERS.
Unidentified mono. pub. by Govt. Pub. House of Political and Scientific Literature, Lithuanian SSR, 1959, 165p.

Linnik, Yu. V.
THE DISPERSION METHOD IN BINARY ADDITIVE PROBLEMS.
Mono. [Dispersionnyi Metod v Binarnykh Additivnykh Zadachakh, Leningrad] 1961, 208p.

Mikheeva, V. I.
TRANSITION METAL HYDRIDES.
Mono. Gidridy Perekhodnykh Metallov, Moscow, 1960, 211p.

Nikolov, Iv.
PRINCIPLES OF MEDICAL DEFENSE [AGAINST ATOMIC, BACTERIOLOGICAL, AND CHEMICAL WARFARE].
Osnovi na Mediko Sanitarnata Zashtita, n. p. (Bulgaria) 1959, p. 207-316, 319-366.

Samsonov, G. V. and Paderno, Yu. B.
BORIDES OF RARE-EARTH METALS.
Mono. Boridy Redkozemel'nykh Metallov, Kiev, 1961, 94p.

Sysoev, N. N.
THE SOVIET EXPEDITIONARY SHIP VITYAZ'
Mono. Sovetskoe Ekspeditsionnoe Sudno Vityaz', Mezhdunarodnyi Geofizicheskii God, Moscow, 1959, 31p.

Tarasenko, N. Yu., Prostakova, I. G. and others.
PREVENTIVE MEASURES FOR RADIATION SAFETY.
Mono. Gigiena Truda pri Rabote na Atomnykh Elektrostantsiyakh [Moscow] 1960, p. 58-103.

Vinberg, G. G.
PRIMARY PRODUCTIVITY OF BODIES OF WATER.
Unidentified Russian mono., Minsk, 1960.

Voshage, H.
THE PHYSICS AND TECHNIQUE OF MASS-SPECTROSCOPIC ANALYSIS, I-VII.
Kerntechnik (West Germany) 1961, v. 3, p. 274-278, 326-330, 374-379, 399-404, 440-445, 492-497, 537-542.

Zlobinskii, B. M.
SAFETY RULES FOR WORKING WITH RADIOACTIVE MATERIALS.
Mono. Bezopasnost' Rabot s Radioaktivnymi Veshchestvami, Moscow, 1961, 344p.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 8, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.